

*Kings County Association of Governments*  
**2014 Regional  
Transportation Plan  
and Sustainable  
Communities Strategy**

*Final*  
**Program  
Environmental  
Impact Report**  
*SCH# 2013101053*



**July 2014**

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***FINAL***  
**PROGRAM ENVIRONMENTAL IMPACT REPORT**

**2014 REGIONAL TRANSPORTATION PLAN  
AND  
SUSTAINABLE COMMUNITIES STRATEGY**

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July 2014

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*FINAL*  
**KINGS COUNTY ASSOCIATION OF GOVERNMENTS  
2014 RTP-SCS PROGRAM EIR**

**Table of Contents**

	Page
Executive Summary .....	ES-1
1.0 Introduction .....	1-1
1.1 Statement of Purpose.....	1-1
1.2 Project Background.....	1-1
1.3 Type of Environmental Document.....	1-3
1.4 EIR Content and Format .....	1-4
1.5 EIR Baseline and Approach for Impact Analysis .....	1-5
1.6 Incorporation by Reference .....	1-7
2.0 Project Description.....	2-1
2.1 Project Applicant.....	2-1
2.2 Project Objectives .....	2-1
2.3 Project Location .....	2-5
2.4 Project Characteristics .....	2-6
2.5 Project Approvals.....	2-27
2.6 Relationship With Other Plans and Programs.....	2-27
3.0 Environmental Setting	
3.1 Physical Setting .....	3-1
3.2 Demographic Setting.....	3-2
3.3 Cumulative Projects Setting .....	3-2
4.0 Environmental Impact Analysis .....	4-1
4.1 Aesthetics .....	4.1-1
4.2 Air Quality .....	4.2-1
4.3 Biological Resources .....	4.3-1
4.4 Cultural Resources.....	4.4-1
4.5 Energy.....	4.5-1
4.6 Environmental Justice .....	4.6-1
4.7 Geology.....	4.7-1
4.8 Greenhouse Gas Emissions/Climate Change.....	4.8-1
4.9 Hydrology and Water Resources.....	4.9-1
4.10 Land Use.....	4.10-1
4.11 Noise .....	4.11-1
4.12 Transportation and Circulation .....	4.12-1
4.13 Less than Significant Environmental Factors.....	4.13-1



5.0 Long-Term Effects.....	5-1
5.1 Growth-Inducing Impacts .....	5-1
5.2 Irreversible Effects .....	5-2
6.0 Alternatives.....	6-1
6.1 Alternative 1: 2040 No-Build Scenario (No Project).....	6-2
6.2 Alternative 2: Intensified Transit with 30% Investment.....	6-6
6.3 Alternative 3: Business as Usual Scenario .....	6-10
6.4 Environmentally Superior Alternative .....	6-13
7.0 References and Preparers	
7.1 References .....	7-1
7.2 List of Preparers .....	7-10
8.0 Comments and Responses .....	8-1
8.1 Summary of Revisions to the Draft EIR.....	8-1
8.2 Comments and Responses.....	8-1

**List of Figures**

Figure 2-1	County and Regional Map.....	2-7
Figure 4.1-1	Scenic Lands and Potential Scenic Highways in Kings County .....	4.1-3
Figure 4.2-1	Generalized Wind Flows in the San Joaquin Valley .....	4.2-2
Figure 4.2-2	San Joaquin Valley Air Basin Annual Average NO <sub>x</sub> Emissions and NO <sub>x</sub> Target for PM <sub>2.5</sub> Attainment.....	4.2-7
Figure 4.2-3	San Joaquin Valley Air Basin Days Over the Level of the Federal 8-hour Ozone Standard.....	4.2-8
Figure 4.2-4	San Joaquin Valley Air Basin Basin-Days Over the 1-hour Ozone Standard .....	4.2-8
Figure 4.3-1	California Wildlife Habitat Relationship Classifications within Kings County .....	4.3-2
Figure 4.3-2	National Wetlands Inventory Categories and Drainages within Kings County.....	4.3-8
Figure 4.3-3	Federally Designated Critical Habitat: Kings County.....	4.3-11
Figure 4.6-1	Minority Blocks within Kings County .....	4.6-4
Figure 4.6-2	Environmental Justice Low-Income Populations.....	4.6-6
Figure 4.6-3	Environmental Justice Communities .....	4.6-9
Figure 4.7-1	Kings County Earthquake Hazards .....	4.7-4
Figure 4.7-2	Seismic Safety Map.....	4.7-5
Figure 4.7-3	California’s Landslide Hazards .....	4.7-9
Figure 4.7-3	California’s Landslide Hazards .....	4.7-9
Figure 4.9-1	FEMA Flood Insurance Rate Map .....	4.9-5
Figure 4.11-1	Noise Compatibility Matrix.....	4.11-8
Figure 4.12-1	Regional Setting and State Route System.....	4.12-2
Figure 4.12-2	Circulation Designations .....	4.12-3



**List of Tables**

Table ES-1	Summary of Environmental Impacts, Mitigation Measures, and Significance After Mitigation.....	ES-4
Table ES-2	Summary of Project Specific Impacts.....	ES-33
Table 2-1	Financially Constrained – Local Funded Roads.....	2-20
Table 4.1-1	2014 RTP-SCS Projects That May Result in Aesthetic Impacts.....	4.1-9
Table 4.2-1	Description Of Selected Air Contaminants .....	4.2-3
Table 4.2-2	Current Federal and State Ambient Air Quality Standards .....	4.2-6
Table 4.2-3	San Joaquin Valley Air Basin Emissions Inventory and Forecasts for NOx and ROG.....	4.2-9
Table 4.2-4	San Joaquin Valley Air Basin Emissions Inventory and Forecasts for PM2.5.....	4.2-9
Table 4.2-5	San Joaquin Valley Air Basin Emissions Inventory and Forecasts for PM10.....	4.2-10
Table 4.2-6	Regional Emissions Analysis.....	4.2-15
Table 4.2-7	On-Road Mobile Source Toxics Comparison.....	4.2-17
Table 4.2-8	SJVAPCD Transportation Control Measures Contributing to Continued PM2.5 and PM10 Improvement.....	4.2-21
Table 4.3-1	Sensitive Communities and Critical Habitats Documented within Kings County .....	4.3-10
Table 4.3-2	Special Status Animal Species Known to Occur or with Potential to Occur within Kings County .....	4.3-12
Table 4.3-3	Special Status Plant Species Known to Occur or with Potential to Occur within Kings County .....	4.3-15
Table 4.3-4	2014 RTP-SCS Projects with Potential to Impact Biological Resources .....	4.3-37
Table 4.4-1	Kings County Historical Resources.....	4.4-2
Table 4.4-2	RTP Projects that May Result in Cultural Resource Impacts .....	4.4-8
Table 4.5-1	Kings County Annual Energy and Natural Gas Consumption Projections.....	4.5-2
Table 4.5-2	Annual Gasoline, Diesel and Energy Consumption in Kings County .....	4.5-3
Table 4.5-3	Indirect Energy Consumption Factors.....	4.5-8
Table 4.5-4	Direct and Indirect Transportation Energy Use .....	4.5-9
Table 4.6-1	Population, Race, and Ethnicity in the KCAG Region (2010) .....	4.6-3
Table 4.6-2	Income and Poverty in the KCAG Region (2012).....	4.6-3
Table 4.6-3	Transportation Modes to Work in the KCAG Region (2012) .....	4.6-7
Table 4.6-4	Average Change in Travel Time associated with the RTP-SCS Projects .....	4.6-14
Table 4.6-5	2014 RTP-SCS Individual Projects With Potential Effects to Environmental Justice Communities .....	4.6-14
Table 4.7-1	Seismic Zone Description .....	4.7-6



Table 4.8-1	Existing and Projected GHG Emissions Reported in the Regional Climate Action Plan .....	4.8-11
Table 4.8-2	Per Capita Carbon Dioxide Emission Comparison: All Vehicle Classes.....	4.8-15
Table 4.8-3	Per Capita Carbon Dioxide Emission Comparison: Passenger Vehicles.....	4.8-16
Table 4.9-1	Kings County Water Bodies Listed as Impaired .....	4.9-3
Table 4.10-1	2014 RTP-SCS Projects that May Result in Land Use Impacts .....	4.10-15
Table 4.11-1	Noise Abatement Criteria .....	4.11-6
Table 4.11-2	Noise Standards for New Uses Affected by Transportation Noise Sources .....	4.11-13
Table 4.11-3	Non-Transportation Noise Standards Average ( $L_{eq}$ )/Maximum ( $L_{max}$ )1.....	4.11-13
Table 4.11-4	Requirements for Acoustical Analyses Prepared in Kings County .....	4.11-14
Table 4.11-5	Typical Construction Noise Levels (in dBA) .....	4.11-16
Table 4.11-6	Construction Equipment Vibration Levels .....	4.11-17
Table 4.11-7	2014 RTP-SCS Local Projects that May Result in Noise Impacts .....	4.11-21
Table 4.12-1	Existing (2013) Performance Measures .....	4.12-4
Table 4.12-2	Kings County Transit Performance Standards .....	4.12-10
Table 4.12-3	Total Vehicle Miles Traveled.....	4.12-12
Table 4.12-4	Total Congested Vehicle Miles Traveled.....	4.12-12
Table 4.12-5	Average Trip Time Per Person.....	4.12-12
Table 6-1	Alternative Comparison.....	6-15
Table 8-1	Commenters on the Draft EIR.....	8-2

## Appendices

- Appendix A: Notice of Preparation, Initial Study, and Responses
- Appendix B: Mitigation Monitoring and Reporting Program (MMRP)



## EXECUTIVE SUMMARY

### PROJECT SYNOPSIS

#### Project Sponsor

Kings County Association of Governments (KCAG)  
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#### Project Description

The Kings County Association of Governments (KCAG), as both the federally-designated metropolitan planning organization (MPO) and the State-designated regional transportation planning agency (RTPA) for Kings County, is required by both federal and State law to prepare a long-range (at least 20-year) transportation planning document known as a Regional Transportation Plan (RTP). The RTP is an action-oriented document used to achieve a coordinated and balanced regional transportation system. California Government Code §65080 et seq. and Title 23 United States Code (USC) §134 require Regional Transportation Planning Agencies (RTPA) and Metropolitan Planning Organizations (MPO) to prepare long-range transportation plans to: 1) establish regional goals, 2) identify present and future needs, deficiencies and constraints, 3) analyze potential solutions, 4) estimate available funding, and 5) propose investments. State Statutes require that the RTP serve as the foundation for the short-range transportation planning documents: the Regional and Federal Transportation Improvement Programs (RTIP and FTIP).

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

Under both federal and State law, KCAG must update its RTP every four years. The 2014 RTP-SCS is the long-range planning, policy, action, and financial document for the Kings County Region. The RTP-SCS covers a 26-year period from 2014 to 2040 and is an update of the 2011 RTP. The RTP-SCS identifies the region's transportation needs and issues and sets forth actions, programs, and projects to address those needs and issues. The RTP-SCS adopts policies, sets goals, and identifies financial resources to encourage and promote the safe and efficient management, operation, and development of a regional intermodal transportation system that would serve the mobility needs of goods and people. In addition, as the MPO for Kings County, KCAG is required to prepare a SCS that demonstrates how GHG reduction targets will be met through integrated land use, housing, and transportation planning. SB 375 also requires that the RTP-SCS's forecasted development pattern for the region be consistent with the eight-year regional housing needs as allocated to member jurisdictions through the Regional Housing Needs Allocation (RHNA) process under State housing law. Thus the RTP-SCS will address





both the transportation component of the RTP, as well as the land use component of the SCS. It should be noted that KCAG does not propose any land use changes, but rather the land use patterns envisioned by the RTP-SCS are based on the General Plan land use and zoning designations of the local agencies (the four incorporated cities and the county). The RTP-SCS would be consistent with the land use and zoning designations in the incorporated and unincorporated areas. Further, the land use and zoning designations of the local agencies have already undergone individual environmental review by each agency. Thus while this EIR considers the land use component of the SCS, no changes to land use are proposed by the RTP-SCS and thus no environmental impacts related to land use, beyond those identified and disclosed previously by the local agencies when reviewing impacts for their General Plan land uses EIRs, would occur. The EIR is not intended to control or constrain local land use authority. SB 375 specifically states that local governments retain their autonomy to plan local General Plan policies and land uses. The RTP-SCS rather is intended to provide a regional policy foundation that local governments may build upon, if they so choose. In sponsoring individual projects, local agencies may choose to take advantage of the streamlining benefits of the Program EIR, or to engage in their own environmental review without use or reference to the Program EIR.

The purposes of this EIR are: (1) consistent with Section 15168(d) of the CEQA Guidelines, to identify potential environmental impacts of transportation projects prioritized in the RTP-SCS, propose mitigation measures that would adequately address those impacts, and simplify future environmental review of transportation projects prioritized in the RTP-SCS, focuses on the environmental impacts of transportation projects and policies contained in the RTP-SCS; and (2) to assess the impacts of the four alternative scenarios discussed in the SCS on GHG emissions from mobile sources.

ARB set GHG reduction targets for the KCAG region from on-road light-duty trucks and passenger vehicles as a 5% reduction from 2005 emissions levels by 2020 and a 10% reduction from 2005 emissions levels by 2035. These targets apply to the KCAG region as a whole for all on-road light-duty trucks and passenger vehicles emissions, and not to individual cities or sub-regions.

~~As described above, the RTP-SCS does not propose to change any land use and zoning designations; rather, the land use scenario envisioned by the RTP-SCS is based on and would be consistent with the existing local General Plan policies and land use designations as specified by the local agencies. As such, the RTP-SCS includes and accommodates the quantitative growth projections for the region based on the buildout of the local General Plans. SB 375 also requires that the RTP-SCS's forecasted development pattern for the region be consistent with the eight-year regional housing needs as allocated to member jurisdictions through the Regional Housing Needs Allocation (RHNA) process under State housing law.~~

## ALTERNATIVES

This EIR examines three alternatives to the proposed RTP-SCS (the "Proposed Project"), which includes all projects in the Program and Plan lists:



**Alternative 1: 2040 No-Build Scenario (No Project):** The No-Build Scenario assumes there will be no new future transportation projects through the year 2040. This alternative is based on 2040 population projections and rather than focusing on coordinating transportation projects that meet land use and transportation scenario recommendations in the 2014 RTP-SCS, there would be no future transportation projects beyond existing conditions.

**Alternative 2: Intensified Transit with 30% Investment:** In addition to the 2014 RTP-SCS projects listed in Table 2-1 and an investment in transit projects of 10-15%, this alternative increases the investment in transit projects to 30%. Transit investments would nearly double under this alternative, increasing opportunities for alternative modes of transportation with improvements such as: improved bus service with more bus stops and more frequent bus service, an increase in the number of bicycle and pedestrian facilities, and improved connectivity of neighborhoods to services and facilities.

**Alternative 3: Business As Usual:** The Business As Usual alternative assumes the continuation of regional growth trends based on 2013 baseline conditions. Existing land use development patterns would continue into the future with future development projects for low-density residential development and auto-oriented travel, and transportation projects that are currently funded.

## SUMMARY OF IMPACTS AND MITIGATION MEASURES

Table ES-1 includes a brief description of the identified environmental impacts, proposed mitigation measures, and the level of significance after mitigation. The 2014 RTP-SCS projects that may contribute to the impacts described below are listed in the tables at the end of the individual impact sections (4.1 through 4.12).

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

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

As a programmatic document, this EIR presents a regional assessment of the impacts of the proposed 2014 RTP-SCS. Analysis of site-specific impacts of individual projects is not the intended use of a program EIR. Many specific projects are not currently defined to the level that would allow for such an analysis. Individual specific environmental analysis of each project will be undertaken as necessary by the appropriate implementing agency prior to each project being considered for approval. Because the act of adopting the 2014 RTP-SCS would not, in itself, result in the implementation of transportation system improvements projects or programs identified in this document, no environmental impacts would be directly associated with this action. This program EIR serves as a first-tier environmental document under CEQA supporting second-tier environmental documents for:

Transportation projects developed during the engineering design process; and Residential or mixed use and infill development projects consistent with the 2014 RTP-SCS.

For the air quality, energy, greenhouse gas, and traffic environmental impacts resulting from the Program, this EIR evaluates potential impacts against both (1) a forecast future baseline condition and (2) current, existing baseline conditions, controlling for impacts caused by population growth and other factors.

Class I impacts are defined as significant, unavoidable adverse impacts which require the adoption of a statement of overriding considerations per Section 15093 of the State CEQA Guidelines if the project is approved. Class II impacts are significant adverse impacts that can be feasibly mitigated to less than significant levels and which require findings to be made under Section 15091 of the State CEQA Guidelines. Class III are considered less than significant impacts, and Class IV are beneficial effects. Where mitigation is called for by the “Project Sponsor,” “project sponsor” refers to the lead agency in charge of approving a transportation or land development project in accordance with the 2014 RTP-SCS, such as the California Department of Transportation (Caltrans), the cities of Avenal, Corcoran, Hanford, and Lemoore, or the County of Kings.

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

Impact	Mitigation Measures	Significance After Mitigation
<b>AESTHETICS</b>		
<p><b>Impact AES-1</b> Proposed transportation improvements under the 2014 RTP-SCS, <del>as well as the land use patterns envisioned by the 2014 RTP-SCS</del>, would not affect public views along eligible or designated scenic corridors, or other scenic routes considered to have high scenic qualities. This would be a Class III, <i>less than significant</i> impact.</p>	<p>None required.</p>	<p>Class III, <i>Less than Significant</i>.</p>
<p><b>Impact AES-2</b> Development of proposed transportation improvement projects under the 2014 RTP-SCS, <del>as well as the land use patterns envisioned by the 2014 RTP-SCS</del> would contribute to the alteration of Kings County’s character from primarily rural (or semi-rural) to a somewhat more suburban condition. This would be a Class I, <i>significant and unavoidable</i> impact.</p>	<p>KCAG shall implement and sponsor agencies can and should implement the following mitigation measures for transportation projects identified in Table 4.1-1. These measures can and should also be implemented for all projects developed pursuant to the 2014 RTP-SCS that would alter the County’s rural character. <b>AES-2(a)</b> Roadway extensions and widenings shall avoid the removal of existing mature trees to the extent possible. The loss of trees that are protected by local agencies shall be replaced at a minimum 2:1 basis and incorporated into the landscaping design for the roadway. The project sponsor of a particular 2014 RTP-SCS <u>transportation</u> project shall ensure the continued vitality of replaced trees through periodic maintenance (see mitigation measures prescribed in Section 4.3 Biological Resources, Impact B-1).</p>	<p>Class I, <i>Significant and Unavoidable</i>.</p>



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

Impact	Mitigation Measures	Significance After Mitigation
	<p><b>AES-2(b)</b> Roadway lighting shall be minimized to the extent possible, and shall not exceed the minimum height requirements of the local jurisdiction in which the project is proposed. This may be accomplished through the use of hoods, low intensity lighting, and using as few lights as necessary to achieve the goals of the project.</p> <p><b>AES-2(c)</b> The project sponsor shall ensure that landscaping is installed to restore natural features along corridors after widening, interchange modifications, realignment, or construction of ancillary facilities. Associated landscape materials and design shall enhance landform variation, provide erosion control, and blend with the natural setting. To ensure compliance with approved landscape plans, the implementing agency shall provide a performance security equal to the value of the landscaping/irrigation installation.</p> <p><b>AES-2(d)</b> <del>Potential noise impacts arising from increased traffic volumes associated with adjacent land development shall be preferentially mitigated through the use of setbacks and the acoustical design of adjacent proposed structures.</del> Where use of sound walls is found to be necessary <u>to reduce potential noise impacts arising from increased traffic volumes</u>, walls shall incorporate offsets, accents, and landscaping to prevent monotony. In addition, sound walls should be complementary in color and texture to surrounding natural features.</p> <p><b>AES-2(e)</b> Where a particular 2014 RTP-SCS transportation improvement project affects adjacent landforms, the project sponsor shall ensure that recontouring provides a smooth and gradual transition between modified landforms and existing grade.</p>	
<b>AIR QUALITY</b>		
<p><b>Impact AQ-1</b> Construction activities associated with transportation projects under the 2014 RTP-SCS, <del>as well as the land use patterns envisioned by the 2014 RTP-SCS</del> would have the potential to result in temporary adverse impacts on air quality in <del>Kings County</del> <u>the region</u>. Impacts would be Class II, <i>significant but mitigable</i>.</p>	<p>The following mitigation measures are recommended by KCAG to reduce, minimize or avoid significant adverse environmental impacts. Sponsor agencies can and should implement the following mitigation measures for applicable <u>transportation</u> projects that result in air quality impacts. Project-specific environmental impacts may require these mitigation measures be revised or expanded in response to site-specific conditions.</p> <p><b>AQ-1(a)</b> The project sponsor shall ensure that SJVAPCD Regulation VIII control measures (listed in Table 6-2 of the GAMAQI) are implemented. The measures shall be noted on all construction plans and the project sponsor shall perform periodic site inspections. SJVAPCD Regulation VIII control measures include the following:</p> <ul style="list-style-type: none"> <li>• All disturbed areas, including storage piles, which are not being actively utilized for construction</li> </ul>	<p>Class III, <i>Less than Significant</i>.</p>



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

Impact	Mitigation Measures	Significance After Mitigation
	<p>purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover or vegetative ground cover.</p> <ul style="list-style-type: none"> <li>• All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.</li> <li>• All land clearing, grubbing, scraping, excavation, land leveling, grading, cut &amp; fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking.</li> <li>• With the demolition of buildings up to six stories in height, all exterior surfaces of the building shall be wetted during demolition.</li> <li>• When materials are transported off-site, all material shall be covered, or effectively wetted to limit visible dust emissions, and at least six inches of freeboard space from the top of the container shall be maintained.</li> <li>• All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. (The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions.) (Use of blower devices is expressly forbidden.)</li> <li>• Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.</li> <li>• Within urban areas, trackout shall be immediately removed when it extends 50 or more feet from the site and at the end of each workday.</li> <li>• Any site with 150 or more vehicle trips per day shall prevent carryout and trackout.</li> </ul> <p><b>AQ-1(b)</b> The project sponsor shall ensure that SJVAPCD enhanced control measures (listed in Table 6-3 of the GAMAQI) are implemented. The measures shall be noted on all construction plans and the project sponsor shall perform periodic site inspections. SJVAPCD enhanced control measures include the following:</p> <ul style="list-style-type: none"> <li>• Limit traffic speeds on unpaved roads to 15 mph.</li> <li>• Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.</li> </ul> <p><b>AQ-1(c)</b> The project sponsor shall ensure that SJVAPCD additional control measures (listed in Table 6-3 of the GAMAQI) are implemented. The measures shall be noted on all construction plans and the</p>	



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

Impact	Mitigation Measures	Significance After Mitigation
	<p>project sponsor shall perform periodic site inspections. SJVAPCD additional control measures include the following:</p> <ul style="list-style-type: none"> <li>• Install wheel washers for all exiting trucks, or wash off all trucks and equipment leaving the site.</li> <li>• Install wind breaks at windward side(s) of construction areas.</li> <li>• Suspend excavation and grading activity when winds exceed 20 mph.</li> <li>• Limit area subject to excavation, grading, and other construction activity at any one time</li> </ul> <p><b>AQ-1(d)</b> The project sponsor shall incorporate the following SJVAPCD heavy duty construction equipment mitigation measures (listed in Table 6-4 of the GAMAQI) to the maximum extent feasible:</p> <ul style="list-style-type: none"> <li>• Use alternative fueled or catalyst equipped diesel construction equipment.</li> <li>• Minimize idling time.</li> <li>• Limit the hours of operation of heavy duty equipment and/or the amount of equipment in use.</li> <li>• Replace fossil-fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set).</li> <li>• Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing of construction activity during the peak-hour of vehicular traffic on adjacent roadways.</li> <li>• Implement activity management (e.g. rescheduling activities to reduce short-term impacts).</li> </ul>	
<p><b>Impact AQ-2</b> Implementation of the 2014 RTP-SCS would not result in an increase of on-road vehicle emissions when compared to the existing conditions established by applicable air quality plans and the future 'no build scenario.' Therefore, long-term operational impacts would be Class III, <i>less than significant</i>.</p>	<p>None required.</p>	<p>Class III, <i>Less than Significant</i>.</p>
<p><b>Impact AQ-3</b> <del>The transportation improvement projects and the land use envisioned by the 2014 RTP-SCS may facilitate increased exposure of sensitive receptors to hazardous air pollutants that may cause health risks.</del> Implementation of the 2014 RTP-SCS would result in a regional decrease in toxic air emissions when compared to the 2013 EIR baseline and applicable air quality plan baselines, and would not result in an increase in toxic air emissions when compared</p>	<p>Consistent with the provisions contained in the <i>California Air Resources Board Air Quality and Land Use Handbook</i> (June 2005), <u>transportation project sponsors shall can and -should identify appropriate measures for transportation projects with , to be incorporated into project building design for residential, school and other sensitive uses located within 500 feet of freeways, heavily travelled arterials, railways and other sources of diesel particulate matter and other known carcinogens. The appropriate measures shall-should include one or more of the following methods as applicable:</u></p>	<p>Class III, <i>Less than Significant</i>.</p>



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

Impact	Mitigation Measures	Significance After Mitigation
<p>to the future 'no build scenario. However, <u>the transportation improvement projects envisioned by the 2014 RTP-SCS may facilitate increased exposure of sensitive receptors to hazardous air pollutants that may cause health risks localized increases may occur as a result of development facilitated by the 2014 RTP-SCS land use scenario.</u> Impacts would be Class II, <i>significant but mitigable.</i></p>	<p><b>AQ-1(b)</b> The transportation project sponsor shall retain a qualified air quality consultant to prepare a health risk assessment in accordance with the California Air Resources Board and the Office of Environmental Health and Hazard Assessment requirements to determine the exposure of <u>project nearby residents/occupants/users to stationary air quality pollutants to a transportation project prior to issuance of a demolition, grading, or building permit.</u> The health risk assessment shall be submitted to the Lead Agency for review and approval. The sponsor shall implement the approved health risk assessment recommendations <u>to any nearby sensitive receptor structures/buildings,</u> if any. Such measures may include:</p> <ul style="list-style-type: none"> <li>• <del>Do not locate sensitive receptors near the entry and exit points of a distribution center.</del></li> <li>• <del>Do not locate sensitive receptors in the same building as a perchloroethylene dry cleaning facility.</del></li> <li>• <del>Maintain a 50 foot buffer from a typical gas dispensing facility (under 3.6 million gallons of gas per year).</del></li> <li>• Install, operate and maintain in good working order a central heating and ventilation system or other air take system in the <u>building of a sensitive receptor that would be impacted by the project,</u> or in each individual residential unit, that meets the efficiency standard of the minimum efficiency reporting value 13. The heating and ventilation 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 high efficiency particulate absorption filters or American Society of Heating, Refrigeration, and Air-Conditioning Engineers 85% supply filters should be used.</li> <li>• <del>Retain a qualified heating and ventilation consultant or high efficiency particulate absorption rate during the design phase of the project to locate the heating and ventilation system based on exposure modeling from the mobile and/or stationary pollutant sources.</del></li> <li>• <u>Ensure that Maintain positive pressure occurs</u> within the building.</li> <li>• Achieve a performance standard of at least one air exchange per hour of fresh outside filtered air.</li> <li>• Achieve a performance standard of at least 4 air exchanges per hour of recirculation.</li> <li>• Achieve a performance standard of 0.25 air exchanges per hour of in unfiltered infiltration if the building is not positively pressurized.</li> </ul>	



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

Impact	Mitigation Measures	Significance After Mitigation
<p><b>Impact AQ-4</b> Re-entrained dust has the potential to increase airborne PM10 and PM2.5 levels in Kings County. The increase in growth <del>expected</del> <u>envisioned by the General Plans of local agencies</u> through the 2014 RTP-SCS planning horizon would result in additional vehicle miles traveled, which would add to the PM10 and PM2.5 levels in the area. However, re-entrained dust levels would be lower with the 2014 RTP-SCS than the 2013 EIR baseline and SIP conformity budgets established by the applicable air quality plans. In addition, with implementation of SJVAPCD control measures to reduce such emissions, impacts would be Class III, <i>less than significant</i>.</p>	<p>None required.</p>	<p>Class III, <i>Less than Significant</i>.</p>
<p><b>Impact AQ-5</b> The proposed 2014 RTP-SCS would reduce emissions of ozone precursors to levels below those identified in the applicable air quality plans. Therefore, impacts related to consistency of the 2014 RTP-SCS with air quality plans would be Class III, <i>less than significant</i>.</p>	<p>None required.</p>	<p>Class III, <i>Less than Significant</i>.</p>
<p><b>BIOLOGICAL RESOURCES</b></p>		
<p><b>Impact B-1</b> Implementation of transportation improvements proposed <del>and the land use scenario</del> <u>envisioned by the 2014 RTP-SCS</u> may result in impacts to special status plant and animal species. Impacts would be Class II, <i>significant but mitigable</i>.</p>	<p>KCAG shall implement and sponsor agencies can and should implement the following mitigation measures for transportation projects identified in Table 4.3-4. These measures can and should also be implemented for future development pursuant to the 2014 RTP-SCS that would result in impacts to special status animal and plant species.</p> <p><b>B-1(a) Biological Resources Screening and Assessment.</b> Because of the programmatic nature of the 2014 RTP-SCS and specific impacts for a given project are unknown at this time, on a project-by-project basis upon completion of final design, a preliminary biological resource screening shall be performed as part of the environmental review process to determine whether the project has any potential to impact biological resources. If it is determined that the project has no potential to impact biological resources, no further action is required. If the project would have the potential to impact biological resources, prior to construction, a qualified biologist shall conduct a biological resources assessment (BRA) or similar type of study to document the existing biological resources within the</p>	<p>Class III, <i>Less than Significant</i>.</p>





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

Impact	Mitigation Measures	Significance After Mitigation
	<p>project footprint plus a buffer and to determine the potential impacts to those resources. The BRA shall evaluate the potential for impacts to all biological resources including, but not limited to special status species, nesting birds, wildlife movement, sensitive plant communities/critical habitat, and other resources judged to be sensitive by local, state, and/or federal agencies. Pending the results of the BRA, design alterations, further technical studies (i.e. protocol surveys) and/or consultations with the USFWS, CDFW and/or other local, state, and federal agencies may be required. The following mitigation measures [B-1(b) through B-1(k)] shall be incorporated, only as applicable, into the BRA for projects where specific resources are present or may be present and impacted by the project. Note that specific surveys described in the mitigation measures below may be completed as part of the BRA where suitable habitat is present.</p> <p><b>B-1(b) Special Status Plant Species Surveys.</b> If completion of the project-specific BRA determines that special status plant species may occur on-site, surveys for special status plants shall be completed prior to any vegetation removal, grubbing, or other construction activity of each segment (including staging and mobilization). The surveys shall be floristic in nature and shall be seasonally-timed to coincide with the target species identified in the project-specific BRA. All plant surveys shall be conducted by a qualified biologist approved by the implementing agency no more than two years before initial ground disturbance. All special status plant species identified on-site shall be mapped onto a site-specific aerial photograph and topographic map. Surveys shall be conducted in accordance with the most current protocols established by the CDFW, USFWS, and the local jurisdictions if said protocols exist. A report of the survey results shall be submitted to the implementing agency, and the CDFW and/or USFWS, as appropriate, for review and approval.</p> <p><b>B-1(c) Special Status Plant Species Avoidance, Minimization, and Mitigation.</b> If State listed or California Rare Plant List 1B species are found during special status plant surveys [pursuant to mitigation measure B-1(b)], then the project shall be re-designed to avoid impacting these plant species, if feasible. Rare plant occurrences that are not within the immediate disturbance footprint, but are located within 50 feet of disturbance limits shall have bright orange protective fencing installed at least 30 feet beyond their extent, or other distance as approved by a qualified biologist, to protect them from harm.</p> <p><b>B-1(d) Restoration and Monitoring.</b> If special status plants species cannot be avoided and will be</p>	



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

Impact	Mitigation Measures	Significance After Mitigation
	<p>impacted by a project implemented under the 2014 RTP-SCS, all impacts shall be mitigated at a minimum ratio of 2:1 (number of acres/individuals restored to number of acres/individuals impacted) for each species as a component of habitat restoration. A restoration plan shall be prepared and submitted to the jurisdiction overseeing the project for approval. (Note: if a state listed plant species will be impacted, the restoration plan shall be submitted to the CDFW for approval). The restoration plan shall include, at a minimum, the following components:</p> <ul style="list-style-type: none"> <li>• Description of the project/impact site (i.e., location, responsible parties, areas to be impacted by habitat type);</li> <li>• Goal(s) of the compensatory mitigation project [type(s) and area(s) of habitat to be established, restored, enhanced, and/or preserved; specific functions and values of habitat type(s) to be established, restored, enhanced, and/or preserved];</li> <li>• Description of the proposed compensatory mitigation site (location and size, ownership status, existing functions and values);</li> <li>• Implementation plan for the compensatory mitigation site (rationale for expecting implementation success, responsible parties, schedule, site preparation, planting plan);</li> <li>• Maintenance activities during the monitoring period, including weed removal as appropriate (activities, responsible parties, schedule);</li> <li>• Monitoring plan for the compensatory mitigation site, including no less than quarterly monitoring for the first year (performance standards, target functions and values, target acreages to be established, restored, enhanced, and/or preserved, annual monitoring reports);</li> <li>• Success criteria based on the goals and measurable objectives; said criteria to be, at a minimum, at least 80 percent survival of container plants and 30 percent relative cover by vegetation type;</li> <li>• An adaptive management program and remedial measures to address any shortcomings in meeting success criteria;</li> <li>• Notification of completion of compensatory mitigation and agency confirmation; and</li> <li>• Contingency measures (initiating procedures, alternative locations for contingency compensatory mitigation, funding mechanism).</li> </ul> <p><b>B-1(e) Endangered/Threatened Species Habitat Assessment and Protocol Surveys.</b> Specific habitat assessment and survey protocol surveys are established for several federally and State Endangered or Threatened species. If the results of the BRA determine that suitable habitat may be present any such species, protocol habitat</p>	



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

Impact	Mitigation Measures	Significance After Mitigation
	<p>assessments/surveys shall be completed in accordance with CDFW and/or USFWS protocols prior to issuance of any construction permits. If through consultation with the CDFW and/or USFWS it is determined that protocol habitat assessments/surveys are not required, said consultation shall be documented prior to issuance of any construction permits. Each protocol has different survey and timing requirements. The applicants for each project shall be responsible for ensuring they understand the protocol requirements.</p> <p><b>B-1(f) Endangered/Threatened Species Avoidance and Minimization.</b> The habitat requirements of endangered and threatened species throughout Kings County are highly variable. The potential impacts from any given project implemented under the 2014 RTP-SCS are likewise highly variable. However, there are several avoidance and minimization measures which can be applied for a variety of species to reduce the potential for impact, with the final goal of no net loss of the species. The following measures may be applied to aquatic and/or terrestrial species. Project sponsors shall select from these measures as appropriate.</p> <ul style="list-style-type: none"> <li>• Ground disturbance shall be limited to the minimum necessary to complete the project. The project limits of disturbance shall be flagged. Areas of special biological concern within or adjacent to the limits of disturbance shall have highly visible orange construction fencing installed between said area and the limits of disturbance.</li> <li>• All projects occurring within/adjacent to aquatic habitats (including riparian habitats and wetlands) shall be completed between April 1 and October 31, if feasible, to avoid impacts to sensitive aquatic species.</li> <li>• All projects occurring within or adjacent to sensitive habitats that may support federally and/or state Endangered/Threatened species shall have a CDFW and/or USFWS-approved biologist present during all initial ground disturbing/vegetation clearing activities. Once initial ground disturbing/vegetation clearing activities have been completed, said biologist shall conduct daily pre-activity clearance surveys for Endangered/Threatened species. Alternatively, and upon approval of the CDFW and/or USFWS, said biologist may conduct site inspections at a minimum of once per week to ensure all prescribed avoidance and minimization measures are begin fully implemented.</li> <li>• No Endangered/Threatened species shall be captured and relocated without expressed permission from the CDFW and/or USFWS.</li> </ul>	



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

Impact	Mitigation Measures	Significance After Mitigation
	<ul style="list-style-type: none"> <li>• If at any time during construction of the project an Endangered/Threatened species enters the construction site or otherwise may be impacted by the project, all project activities shall cease. A CDFW/USFWS-approved biologist shall document the occurrence and consult with the CDFW and/or USFWS as appropriate.</li> <li>• For all projects occurring in areas where Endangered/Threatened species may be present and are at risk of entering the project site during construction, exclusion fencing shall be placed along the project boundaries prior to start of construction (including staging and mobilization). The placement of the fence shall be at the discretion of the CDFW/USFWS-approved biologist. This fence shall consist of solid silt fencing placed at a minimum of 3 feet above grade and 2 feet below grade and shall be attached to wooden stakes placed at intervals of not more than 5 feet. The fence shall be inspected weekly and following rain events and high wind events and shall be maintained in good working condition until all construction activities are complete.</li> <li>• All vehicle maintenance/fueling/staging shall occur not less than 100 feet from any riparian habitat or water body. Suitable containment procedures shall be implemented to prevent spills. A minimum of one spill kit shall be available at each work location near riparian habitat or water bodies.</li> <li>• No equipment shall be permitted to enter wetted portions of any affected drainage channel.</li> <li>• All equipment operating within streams shall be in good conditions and free of leaks. Spill containment shall be installed under all equipment staged within stream areas and extra spill containment and clean up materials shall be located in close proximity for easy access.</li> <li>• If project activities could degrade water quality, water quality sampling shall be implemented to identify the pre-project baseline, and to monitor during construction for comparison to the baseline.</li> <li>• If water is to be diverted around work sites, a diversion plan shall be submitted (depending upon the species that may be present) to the CDFW, RWQCB, USFWS, and/or NMFS for their review and approval prior to the start of any construction activities (including staging and mobilization). If pumps are used, all intakes shall be completely screened with wire mesh not larger than five millimeters to prevent animals from entering the pump system.</li> <li>• At the end of each work day, excavations shall be secured with cover or a ramp provided to prevent wildlife entrapment.</li> </ul>	



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

Impact	Mitigation Measures	Significance After Mitigation
	<ul style="list-style-type: none"> <li>• All trenches, pipes, culverts or similar structures shall be inspected for animals prior to burying, capping, moving, or filling.</li> <li>• The CDFW/USFWS-approved biologist shall remove invasive aquatic species such as bullfrogs and crayfish from suitable aquatic habitat whenever observed and shall dispatch them in a humane manner and dispose of properly.</li> <li>• If any federally and/or state protected species are harmed, the CDFW/USFWS-approved biologist shall document the circumstances that led to harm and shall determine if project activities should cease or be altered in an effort to avoid additional harm to these species. Dead or injured special status species shall be disposed of at the discretion of the CDFW and USFWS. All incidences of harm shall be reported to the CDFW and USFWS within 48 hours.</li> <li>• Considering the potential for projects to impact Federal and State listed species and their habitat, KCAG and sponsor agencies shall contact the CDFW and USFWS to identify mitigation banks within Kings County during development of the RTP. Upon implementation of projects included in the RTP, but on a project-by-project basis, if the results of the BRA determines that impacts to Federal and State threatened or endangered species habitat are expected, KCAG and sponsor agencies shall explore species appropriate mitigation bank(s) in the County for purchase of mitigation credits.</li> </ul> <p><b>B-1(g) Non-Listed Special Status Animal Species Avoidance and Minimization.</b> Several State Species of Special Concern may be impacted by transportation projects implemented under the 2014 RTP-SCS. The ecological requirements and potential for impacts is highly wvariable among these species. Depending on the species identified in the BRA, several of the measures identified under B-1(f) shall be applicable to the project. In addition, measures shall be selected from among the following to reduce the potential for impacts to non-listed special status animal species:</p> <ul style="list-style-type: none"> <li>• For non-listed special-status terrestrial amphibians and reptiles, coverboard surveys shall be completed within three months of the start of construction. The coverboards shall be at least four feet by four feet and constructed of untreated plywood placed flat on the ground. The coverboards shall be checked by a qualified biologist once per week for each week after placement up until the start of vegetation removal. All non-listed special status and common animals found under the coverboards</li> </ul>	



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

Impact	Mitigation Measures	Significance After Mitigation
	<p>shall be captured and placed in five-gallon buckets for transportation to relocation sites. All relocation sites shall be reviewed by the project sponsor and shall consist of suitable habitat. Relocation sites shall be as close to the capture site as possible but far enough away to ensure the animal(s) is not harmed by construction of the project. Relocation shall occur on the same day as capture. CNDDDB Field Survey Forms shall be submitted to the CDFW for all special status animal species observed.</p> <ul style="list-style-type: none"> <li>• Pre-construction clearance surveys shall be conducted within 14 days of the start of construction (including staging and mobilization). The surveys shall cover the entire disturbance footprint plus a minimum 200 foot buffer, if feasible, and shall identify all special status animal species that may occur on-site. All non-listed special status species shall be relocated from the site either through direct capture or through passive exclusion (e.g., American badger). A report of the pre-construction survey shall be submitted to KCAG, RTPA, and or the local jurisdiction for their review and approval prior to the start of construction.</li> <li>• A qualified biologist shall be present during all initial ground disturbing activities, including vegetation removal to recover special status animal species unearthed by construction activities.</li> <li>• Upon completion of the project, a qualified biologist shall prepare a Final Compliance report documenting all compliance activities implemented for the project, including the pre-construction survey results. The report shall be submitted within 30 days of completion of the project.</li> <li>• If special status bat species may be present and impacted by the project, a qualified biologist shall conduct within 30 days of the start of construction presence/absence surveys for special status bats in consultation with the CDFW where suitable roosting habitat is present. Surveys shall be conducted using acoustic detectors and by searching tree cavities, crevices, and other areas where bats may roost. If active roosts are located, exclusion devices such as netting shall be installed to discourage bats from occupying the site. If a roost is determined by a qualified biologist to be used by a large number of bats (large hibernaculum), bat boxes shall be installed near the project site. The number of bat boxes installed will depend on the size of the hibernaculum and shall be determined through consultations with the CDFW. If a maternity colony has become established, all construction activities shall be postponed within a</li> </ul>	



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

Impact	Mitigation Measures	Significance After Mitigation
	<p>500-foot buffer around the maternity colony until it is determined by a qualified biologist that the young have dispersed. Once it has been determined that the roost is clear of bats, the roost shall be removed immediately.</p> <p><b>B-1(h) Preconstruction Surveys for Nesting Birds.</b> For construction activities occurring during the nesting season (generally February 1 to September 15), surveys for nesting birds covered by the California Fish and Game Code and the Migratory Bird Treaty Act shall be conducted by a qualified biologist no more than 14 days prior to vegetation removal. The surveys shall include the entire segment disturbance area plus a 200 foot buffer around the site. If active nests are located, all construction work shall be conducted outside a buffer zone from the nest to be determined by the qualified biologist. The buffer shall be a minimum of 50 feet for non-raptor bird species and at least 150 feet for raptor species. Larger buffers may be required depending upon the status of the nest and the construction activities occurring in the vicinity of the nest. The buffer area(s) shall be closed to all construction personnel and equipment until the adults and young are no longer reliant on the nest site. A qualified biologist shall confirm that breeding/nesting is completed and young have fledged the nest prior to removal of the buffer. A report of these preconstruction nesting bird surveys shall be submitted to KCAG, RTPA, and/or the local jurisdiction.</p> <p><b>B-1(i) Worker Environmental Awareness Program (WEAP).</b> Prior to initiation of construction activities (including staging and mobilization), all personnel associated with project construction shall attend WEAP training, conducted by a qualified biologist, to aid workers in recognizing special status resources that may occur in the project area. The specifics of this program shall include identification of the sensitive species and habitats, a description of the regulatory status and general ecological characteristics of sensitive resources, and review of the limits of construction and mitigation measures required to reduce impacts to biological resources within the work area. A fact sheet conveying this information shall also be prepared for distribution to all contractors, their employers, and other personnel involved with construction of the project. All employees shall sign a form documenting provided by the trainer indicating they have attended the WEAP and understand the information presented to them. The form shall be submitted to KCAG and/or the local jurisdiction to document compliance.</p>	



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

Impact	Mitigation Measures	Significance After Mitigation
	<p><b>B-1(j) Tree Protection.</b> If it is determined that construction may impact trees protected by local agencies, the project sponsor shall procure all necessary tree removal permits. A tree protection and replacement plan shall be developed by a certified arborist as appropriate. The plan shall include, but would not be limited to, an inventory of trees to within the construction site, setbacks from trees and protective fencing, restrictions regarding grading and paving near trees, direction regarding pruning and digging within root zone of trees, and requirements for replacement and maintenance of trees. If protected trees will be removed, replacement tree plantings of like species in accordance with local agency standards, but at a minimum ratio of 2:1 (trees planted to trees impacted), shall be installed on-site or at an approved off-site location and a restoration and monitoring program shall be developed in accordance with B-1(d) and shall be implemented for a minimum of seven years or until stasis has been determined by certified arborist. If a protected tree shall be encroached upon but not removed, a certified arborist shall be present to oversee all trimming of roots and branches.</p>	
<p><b>Impact B-2</b> Implementation of transportation improvements proposed and the land use scenario envisioned by the 2014 RTP-SCS may result in impacts to sensitive habitats, including federally protected wetlands. This impact would be Class II, <i>significant but mitigable</i>.</p>	<p>KCAG shall implement and sponsor agencies can and should implement the following mitigation measures for transportation projects identified in Table 4.3-4. <del>These measures can and should also be implemented for future development pursuant to the 2014 RTP-SCS that would result in impacts to sensitive habitats.</del> Mitigation measures B-2(c) and B-2(d) also address the potential for impacts due to invasive plant species.</p> <p><b>B-2(a) Jurisdictional Delineation.</b> If projects implemented under the 2014 RTP-SCS occur within or adjacent to wetland, drainages, riparian habitats, or other areas that may fall under the jurisdiction of the CDFW, USACE, and/or RWQCB, a qualified biologist shall complete a jurisdictional delineation. The jurisdictional delineation shall determine the extent of the jurisdiction for each of these agencies and shall be conducted in accordance with the requirement set forth by each agency. The result shall be a preliminary jurisdictional delineation report that shall be submitted to the implementing agency, USACE, RWQCB, and CDFW, as appropriate, for review and approval. If jurisdictional areas are expected to be impacted, then the RWQCB would require a Waste Discharge Requirements (WDR) permit and/or Section 401 Water Quality Certification (depending upon whether or not the feature falls under federal jurisdiction). If CDFW asserts its jurisdictional authority, then a Streambed Alteration Agreement pursuant to Section 1600 et seq. of the California Fish and Game Code would also be required prior to construction within the areas of CDFW jurisdiction. If the USACE asserts its authority, then a permit pursuant to Section 404 of the</p>	<p>Class III, <i>Less than Significant</i>.</p>





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

Impact	Mitigation Measures	Significance After Mitigation
	<p>Clean Water Act would likely be required.</p> <p><b>B-2(b) Wetland and Riparian Habitat Restored.</b> Impacts to jurisdictional wetland and riparian habitat shall be mitigated at a minimum ratio of 2:1 (acres of habitat restored to acres impacted), and shall occur on-site or as close to the impacted habitat as possible. A mitigation and monitoring plan shall be developed by a qualified biologist in accordance with mitigation measure B-1(d) above and shall be implemented for no less than five years after construction of the segment, or until the KCAG/RTPA/local jurisdiction and/or the permitting authority (e.g., CDFW or USACE) has determined that restoration has been successful.</p> <p><b>B-2(c) Landscaping Plan.</b> If landscaping is proposed for a specific project, a qualified biologist/landscape architect shall prepare a landscape plan for that project. This plan shall indicate the locations and species of plants to be installed. Drought tolerant, locally native plant species shall be used. Noxious, invasive, and/or non-native plant species that are recognized on the Federal Noxious Weed List, California Noxious Weeds List, and/or California Invasive Plant Council Lists 1, 2, and 4 shall not be permitted. Species selected for planting shall be similar to those species found in adjacent native habitats.</p> <p><b>B-2(d) Invasive Weed Prevention and Management Program.</b> Prior to start of construction for each project, an Invasive Weed Prevention and Management Program shall be developed by a qualified biologist to prevent invasion of native habitat by non-native plant species. A list of target species shall be included, along with measures for early detection and eradication. All disturbed areas shall be hydroseeded with a mix of locally native species upon completion of work in those areas. In areas where construction is ongoing, hydroseeding shall occur where no construction activities have occurred within six (6) weeks since ground disturbing activities ceased. If exotic species invade these areas prior to hydroseeding, weed removal shall occur in consultation with a qualified biologist and in accordance with the restoration plan.</p>	
<p><b>Impact B-3</b> Implementation of transportation improvements proposed <del>and the land use scenario envisioned by the 2014 RTP-SCS</del> may impact wildlife movement, including fish migration, and/or impede the use of a native wildlife nursery. This impact would be Class I, <i>significant and unavoidable</i>.</p>	<p>KCAG shall implement and sponsor agencies can and should implement the following mitigation measures for transportation projects identified in Tables 4.3-4. <del>These measures can and should also be implemented for future development projects pursuant to the 2014 RTP-SCS that would result in that would impact wildlife movement, including fish migration, and/or impede the use of native wildlife nursery.</del> KCAG shall implement and sponsor agencies can and should implement the following mitigation measures</p>	<p>Class I, <i>Significant and Unavoidable</i>.</p>



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

Impact	Mitigation Measures	Significance After Mitigation
	<p>for transportation projects identified in Tables 4.3-4. <del>These measures can and should also be implemented for future development projects pursuant to the 2014 RTP-SCS that would result in that would impact wildlife movement, including fish migration, and/or impede the use of native wildlife nursery.</del></p> <p><b>B-3(a) Fence and Lighting Design.</b> All projects including long segments of fencing and lighting shall be designed to minimize impacts to wildlife. Fencing shall not block wildlife movement through riparian or other natural habitat. Where fencing is required for public safety concerns, the fence shall be designed to permit wildlife movement by incorporating design features such as:</p> <ul style="list-style-type: none"> <li>• A minimum 16 inches between the ground and the bottom of the fence to provide clearance for small animals;</li> <li>• A minimum 12 inches between the top two wires, or top the fence with a wooden rail, mesh, or chain link instead of wire to prevent animals from becoming entangled; and</li> <li>• If privacy fencing is required near open space areas, openings at the bottom of the fence measure at least 16 inches in diameter shall be installed at reasonable intervals to allow wildlife movement.</li> </ul> <p>If fencing must designed in such a manner that wildlife passage would not be permitted, wildlife crossing structures shall be incorporated into the project design as appropriate.</p> <p>Similarly, lighting installed as part of any project shall be designed to be minimally disruptive to wildlife. This may be accomplished through the use of hoods to direct light away from natural habitat, using low intensity lighting, and using a few lights as necessary to achieve the goals of the project.</p> <p><b>B-3 (b) Construction Best Management Practices.</b> The following construction Best Management Practices (BMPs) shall be incorporated into all grading and construction plans:</p> <ul style="list-style-type: none"> <li>• Designation of a 20 mile per hour speed limit in all construction areas.</li> <li>• All vehicles and equipment shall be parked on pavement, existing roads, and previously disturbed areas, and clearing of vegetation for vehicle access shall be avoided to the greatest extent feasible.</li> <li>• The number of access routes, number and size of staging areas, and the total area of the activity shall be limited to the minimum necessary to achieve the goal of the project.</li> <li>• Designation of equipment washout and fueling areas to be located within the limits of grading at</li> </ul>	



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

Impact	Mitigation Measures	Significance After Mitigation
	<p>a minimum of 100 feet from waters, wetlands, or other sensitive resources as identified by a qualified biologist. Washout areas shall be designed to fully contain polluted water and materials for subsequent removal from the site.</p> <ul style="list-style-type: none"> <li>• Daily construction work schedules should be limited to daylight hours only, to the extent feasible.</li> <li>• Mufflers shall be used on all construction equipment and vehicles shall be in good operating condition.</li> <li>• Drip pans shall be placed under all stationary vehicles and mechanical equipment.</li> <li>• All trash shall be placed in sealed containers and shall be removed from the project site a minimum of once per week.</li> <li>• No pets are permitted on project site during construction.</li> </ul>	
<b>CULTURAL RESOURCES</b>		
<p><b>Impact CR-1</b> Implementation of proposed transportation improvements and the land use scenario envisioned by the 2014 RTP-SCS could disturb known and unknown cultural resources. Impacts to archaeological and paleontological resources would be Class II, <i>significant but mitigable</i> and impacts to historical resources would be Class I, <i>significant and unavoidable</i>.</p>	<p>In general, prior to commencement of any <del>action, development or land use changes</del> <u>transportation project</u> on lands subject to federal jurisdiction or <del>for projects</del> involving federal funding, a cultural resource survey and an environmental analysis must be prepared. Historic resources are also protected under the regulations of the National Historic Preservation Act and the Department of Transportation Act of 1966. County and city sponsored projects would be subject to local ordinance requirements, including General Plan provisions that protect cultural resources.</p> <p>In order to provide protection of cultural resources, the following mitigation measures are recommended by KCAG. Sponsor agencies can and should implement the following mitigation measures for applicable transportation projects identified in Table 4.4-2:</p> <p><b>CR-1(a)</b> The project sponsor of a 2014 RTP-SCS project involving earth disturbance, the installation of pole signage or lighting, or construction of permanent above ground structures or roadways shall ensure that the following elements are included in the project's individual environmental review:</p> <ol style="list-style-type: none"> <li>1. Prior to construction, a map defining the Area of Potential Effects (APE) shall be prepared on a project by project basis for 2014 RTP-SCS improvements which involve earth disturbance, the installation of pole signage or lighting, or construction of permanent above ground structures. This map will indicate the areas of primary and secondary disturbance associated with construction and operation of the facility and will help in determining whether known archaeological, paleontological or historical resources are located within the impact zone.</li> <li>2. A preliminary study of each project area, as defined in the APE, shall be completed to</li> </ol>	<p>Impacts related to archaeological and paleontological resources would be reduced to a Class III, <i>Less than Significant</i>.</p> <p>Impacts related to historic structures would remain <i>Significant and Unavoidable</i>.</p>



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

Impact	Mitigation Measures	Significance After Mitigation
	<p>determine whether or not the project area has been studied under an earlier investigation, and to determine the impacts of the previous project.</p> <ol style="list-style-type: none"> <li>3. If the results of the preliminary studies indicate additional studies are necessary; development of field studies and/or other documentary research shall be developed and completed (Phase I studies). Negative results would result in no additional studies for the project area.</li> <li>4. Based on positive results of the Phase I studies, an evaluation of identified resources shall be completed to determine the potential eligibility/significance of the resources (Phase II studies).</li> <li>5. Phase III mitigation studies shall be coordinated with the Office of Historic Preservation, as the research design will require review and approval from the OHP. In the case of prehistoric or Native American related resources, the Native American Heritage Commission and/or local representatives of the Native American population shall be contacted and permitted to respond to the testing/mitigation programs.</li> </ol> <p><b>CR-1(b)</b> If development of the proposed improvement requires the presence of an archaeological, Native American, or paleontological monitor, the project sponsor shall ensure that a Native American monitor, certified archaeologist, and/or certified paleontologist, as applicable, monitors the grading and/or other initial ground altering activities. The schedule and extent of the monitoring will depend on the grading schedule and/or extent of the ground alterations. This requirement can be accomplished through placement of conditions on the project by the local jurisdiction during individual environmental review.</p> <p><b>CR-1(c)</b> The project sponsor shall ensure that materials recovered over the course of any given improvement are adequately cleaned, labeled, and curated at a recognized repository. This requirement can be accomplished through placement of conditions on the project by the local jurisdiction during individual environmental review.</p> <p><b>CR-1(d)</b> The project sponsor shall ensure that mitigation for potential impacts to significant cultural resources includes one or more of the following:</p> <ul style="list-style-type: none"> <li>• Realignment of the project right-of-way (avoidance; the most preferable method);</li> <li>• Capping of the site and leaving it undisturbed;</li> <li>• Addressing structural remains with respect to NRHP guidelines (Phase III studies);</li> <li>• Relocating structures per NRHP guidelines;</li> <li>• Creation of interpretative facilities; and/or</li> <li>• Development of measures to prevent vandalism.</li> </ul>	



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

Impact	Mitigation Measures	Significance After Mitigation
	This can be accomplished through placement of conditions on the project by the local jurisdiction during individual environmental review.	
<b>ENERGY</b>		
<p><b>Impact E-1</b> Future transportation improvement projects and implementation of the land use scenario envisioned by the 2014 RTP-SCS would increase demand for energy beyond existing conditions. However, the 2014 RTP-SCS would result in lower VMT and consume less energy than the No Project scenario. The project would not increase energy use relative to future no project conditions, would not result in inefficient, wasteful, or unnecessary use of energy, and would be consistent with adopted plans and policies related to energy conservation. As such, this impact would be Class III, <i>less than significant</i>.</p>	<p>The 2014 RTP-SCS proposes many projects that would provide greater opportunity for County residents and visitors to use alternatives to single occupancy vehicle trips for transportation and reduce the demand for energy used in transportation. The 2014 RTP-SCS also includes policies that encourage land use planning that encourages walking, biking, and transit use.</p> <p>The following mitigation measures recommended by KCAG are not required to reduce energy impacts to less than significant. They are provided as measures that could be implemented to reduce energy consumption. Sponsor agencies should implement the following measures for applicable <u>transportation</u> projects to minimize energy impacts. Project-specific environmental impacts may require these measures be revised or expanded in response to site-specific conditions.</p> <p><b>E-1(a)</b> New <u>transportation</u> facilities should be designed with energy-efficient equipment and <del>passive solar design (e.g., orientation of building to maximize natural heating and cooling, solar water heating, use of daylighting, and placement of trees to aid passive cooling, protection from prevailing winds, and maximum year-round solar access)</del>, provided that additional capital costs are offset by estimated energy savings during the first 5 years of operation. Additional improvements with longer payback periods, such as photovoltaic solar electric systems, should be considered where applicable.</p> <p><b>E-1(b)</b> All lighting should be energy efficient and designed to use the least amount of energy to serve the purpose of the lighting. Lighting should utilize solar energy wherever feasible.</p> <p><b>E-1(c)</b> New landscaping design and irrigation systems for <u>transportation projects</u> should be water efficient.</p>	Class III, <i>Less than Significant</i> .
<p><b>Impact E-2</b> 2014 RTP-SCS projects would not significantly impact the transportation of energy resources within the County. This impact would be Class III, <i>less than significant</i>.</p>	None required.	Class III, <i>Less than Significant</i> .



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

Impact	Mitigation Measures	Significance After Mitigation
<b>ENVIRONMENTAL JUSTICE</b>		
<p><b>Impact EJ-1</b> Implementation of the 2014 RTP-SCS may cause adverse effects on a minority or low-income population; however, these potential impacts would not be disproportionately high as per Executive Order 12898 regarding environmental justice. This would be a Class III, <i>less than significant</i> impact.</p>	<p>None required in addition to those recommended to address impacts to Air Quality, Noise and Transportation referenced above.</p>	<p>Class III, <i>Less than Significant</i>.</p>
<p><b>Impact EJ-2</b> The mobility benefits derived from the 2014 RTP-SCS related to travel times and accessibility by transit, single-occupancy vehicles, bicycling or walking will not be less for minority populations, low-income populations, and populations with low mobility in the KCAG region than for the population as a whole. This impact would be Class III, <i>less than significant</i>.</p>	<p>None required.</p>	<p>Class III, <i>Less than Significant</i>.</p>
<b>GEOLOGY</b>		
<p><b>Impact G-1</b> Some proposed 2014 RTP-SCS projects could be at risk from seismic activity. Although fault rupture does not pose a substantial threat in <del>Kings County</del> <u>the region</u>, ground-shaking may affect 2014 RTP-SCS projects. This is considered a Class II, <i>significant but mitigable</i> impact.</p>	<p>KCAG shall implement and sponsor agencies can and should implement the following mitigation measure for all <u>transportation</u> projects developed pursuant to the 2014 RTP-SCS that would result in seismic impacts.</p> <p><b>G-1</b> The project sponsor shall ensure that the structure is designed and constructed to the latest geotechnical standards. This may necessitate site-specific geologic and soils engineering investigations to exceed the code for high groundshaking zones.</p>	<p>Class III, <i>Less than Significant</i>.</p>
<p><b>Impact G-2</b> Some projects proposed in the 2014 RTP-SCS may be located in areas with low to moderate liquefaction potential, expansive soils, and landsliding hazards. This is considered a Class II, <i>significant but mitigable</i> impact.</p>	<p>KCAG shall implement and sponsor agencies can and should implement the following mitigation measure for all <u>transportation</u> projects developed pursuant to the 2014 RTP-SCS that would reduce potential impacts associated with liquefaction, expansive soils and landsliding.</p> <p><b>G-2(a)</b> If a 2014 RTP-SCS project is located in an area of moderate to high liquefaction potential, the project sponsor shall ensure that the project is designed based upon appropriate geology, soils and earthquake engineering studies. Possible design measures include deep foundations, removal of liquefiable materials and dewatering.</p> <p><b>G-2(b)</b> If a 2014 RTP-SCS project involves cut slopes over 15 feet in height, the project sponsor shall ensure that specific slope stabilization studies are conducted. Possible stabilization methods include buttresses, retaining walls and soldier piles.</p>	<p>Class III, <i>Less than Significant</i>.</p>



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

Impact	Mitigation Measures	Significance After Mitigation
	<p><b>G-2(c)</b> If a 2014 RTP-SCS project is located in an area of expansive soils, the project sponsor shall ensure that a site-specific investigation and appropriate design factors are implemented. Such design factors could include concrete slabs on grade with increased steel reinforcement, removal of highly expansive material and replacement with non-expansive import fill material, or chemical treatment with hydrated lime to reduce the expansion characteristics of the soils.</p>	
<b>GREENHOUSE GASES</b>		
<p><b>Impact GHG-1</b> Construction of the transportation improvement projects and future land use patterns envisioned by the 2014 RTP-SCS would generate temporary short-term GHG emissions. Impacts would be Class II, <i>significant but mitigable</i>.</p>	<p>The following mitigation measures are recommended by KCAG to reduce, minimize or avoid significant adverse environmental impacts. Sponsor agencies can and should implement the following mitigation measures for applicable transportation projects to minimize GHG emissions. Project-specific environmental impacts may require these mitigation measures be revised or expanded in response to site-specific conditions.</p> <p><b>Impact GHG-1</b> The project sponsor shall ensure that applicable GHG-reducing diesel particulate and NOX emissions measures for off-road construction vehicles are implemented during construction. The measures shall be noted on all construction plans and the project sponsor shall perform periodic site inspections. Applicable GHG-reducing measures include the following.</p> <ul style="list-style-type: none"> <li>• Use of diesel construction equipment meeting ARB's Tier 2 certified engines or cleaner off-road heavy-duty diesel engines, and comply with the State Off-Road Regulation;</li> <li>• Use of on-road heavy-duty trucks that meet the ARB's 2007 or cleaner certification standard for on-road heavy-duty diesel engines, and comply with the State On-Road Regulation;</li> <li>• All on and off-road diesel equipment shall not idle for more than 5 minutes. Signs shall be posted in the designated queuing areas and or job sites to remind drivers and operators of the 5 minute idling limit;</li> <li>• Use of electric equipment in place of diesel-powered equipment, where feasible;</li> <li>• Substitute gasoline-powered in place of diesel-powered equipment, where feasible;</li> <li>• Use of alternatively fueled construction equipment, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane or biodiesel, in place of diesel powered equipment for 15 percent of the fleet;</li> <li>• Use of materials sources from local suppliers; and</li> <li>• Recycling and reuse of at least 50 percent of construction waste materials.</li> </ul>	<p>Class III, <i>Less than Significant</i>.</p>



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

Impact	Mitigation Measures	Significance After Mitigation
<p><b>Impact GHG-2</b> Implementation of the 2014 RTP-SCS would result in a decrease in GHG emissions compared to both 2013 baseline and future 'no project' conditions. Impacts would be Class III, <i>less than significant</i>.</p>	<p>None required.</p>	<p>Class III, <i>Less than Significant</i>.</p>
<p><b>Impact GHG-3</b> Implementation of the 2014 RTP-SCS would not interfere with the GHG emissions reduction goals of AB 32 or SB 375. Impacts would be Class III, <i>less than significant</i>.</p>	<p>None required.</p>	<p>Class III, <i>Less than Significant</i>.</p>
<p><b>Impact GHG-4</b> Implementation of the 2014 RTP-SCS would not interfere with the goals of applicable GHG reduction plans and policies, including AB 32 and SB 375. Impacts would be Class III, <i>less than significant</i>.</p>	<p>None required.</p>	<p>Class III, <i>Less than Significant</i>.</p>
<p><b>HYDROLOGY AND WATER RESOURCES</b></p>		
<p><b>Impact W-1</b> Implementation of proposed transportation improvements and future projects facilitated by the land use scenario envisioned in the 2014 RTP-SCS would incrementally increase countywide water demand. Such impacts would be Class II, <i>significant but mitigable</i>.</p>	<p>The following mitigation measures are recommended by KCAG to reduce, minimize or avoid significant adverse environmental impacts related to water supplies. Sponsor agencies can and should implement the following mitigation measures for applicable projects that result in potential impacts to water supplies:</p> <p><b>W-1(a)</b> The project sponsor shall ensure that, where economically feasible, reclaimed water is used for dust suppression during construction activities.</p> <p><b>W-1(b)</b> The project sponsor shall ensure that low water use landscaping (i.e., drought tolerant plants and drip irrigation) is installed.</p> <p><b>W-1(c)</b> The project sponsor shall ensure that, if feasible, landscaping associated with proposed improvements is maintained using reclaimed water.</p> <p><b>W-1(d)</b> The project sponsor shall ensure that porous pavement materials are utilized, where feasible, to allow for groundwater percolation.</p> <p><b>W-1(e)</b> The sponsor of a 2014 RTP-SCS project that requires potable water service should coordinate with water supply system operators to ensure that the existing water supply systems have the capacity to handle the increase. If the current infrastructure servicing the project site is found to be inadequate, infrastructure improvements for the appropriate public service or utility should be provided by the project sponsor. In addition, wherever feasible, reclaimed</p>	<p>Class III, <i>Less than Significant</i>.</p>





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

Impact	Mitigation Measures	Significance After Mitigation
	water should be used for landscaping purposes instead of potable water.	
<p><b>Impact W-2</b> Implementation of proposed transportation improvements and future projects facilitated by the land use scenario envisioned in the 2014 RTP-SCS could result in soil erosion and contaminants in runoff, which could degrade surface and ground water quality. This impact is considered Class II, <i>significant but mitigable</i>.</p>	<p>The following mitigation measures are recommended by KCAG to reduce, minimize or avoid significant adverse environmental impacts related to water quality. Sponsor agencies can and should implement the following mitigation measures for applicable projects that result in potential impacts to water quality:</p> <p><b>W-2(a)</b> The project sponsor shall ensure that fertilizer/pesticide application plans for any new right-of-way landscaping are prepared to minimize deep percolation of contaminants. This shall be accomplished through the placement of conditions on the project by the local jurisdiction during individual environmental review.</p> <p><b>W-2(b)</b> The project sponsor shall ensure that the road widening or roadway extension improvement projects directs runoff into subsurface percolation basins and traps which would allow for the removal of urban pollutants, fertilizers, pesticides, and other chemicals. This shall be accomplished through the placement of conditions on the project by the local jurisdiction during individual environmental review.</p> <p><b>W-2(c)</b> For roadway projects that would disturb at least one acre, a SWPPP shall be developed prior to the initiation of grading and implemented for all construction activity on the project site. The SWPPP shall include specific BMPs to control the discharge of material from the site and into the creeks and local storm drains. BMP methods may include, but would not be limited to, the use of temporary retention basins, straw bales, sand bagging, mulching, erosion control blankets and soil stabilizers.</p>	<p>Class III, <i>Less than Significant</i>.</p>
<p><b>Impact W-3</b> Implementation of proposed transportation improvements and future projects in accordance with the land use scenario envisioned in the 2014 RTP-SCS could be subject to flood hazards due to storm events and/or dam failure. Impacts are considered Class II, <i>significant but mitigable</i>.</p>	<p>KCAG shall implement and sponsor agencies can and should implement the following mitigation measure for all projects developed pursuant to the 2014 RTP-SCS that would result in impacts from flooding.</p> <p><b>W-3</b> If a 2014 RTP-SCS project is located in an area with high flooding potential due a storm event or dam inundation, the project sponsor shall ensure that the structure is elevated at least one foot above the 100-year flood zone elevation and that bank stabilization and erosion control measures are implemented along creek crossings.</p>	<p>Class III, <i>Less than Significant</i>.</p>



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

Impact	Mitigation Measures	Significance After Mitigation
<b>LAND USE</b>		
<p><b>Impact LU-1</b> Implementation of proposed transportation improvements <del>and the land use scenario</del> envisioned by the 2014 RTP-SCS could result in land use conflicts with existing sensitive land uses. This is considered a Class II, <i>significant but mitigable</i> impact.</p>	<p>The following mitigation measure is recommended by KCAG to reduce potential impacts related to conflicts between <u>transportation</u> RTP improvements and nearby sensitive land uses. Sponsor agencies can and should implement the following mitigation measure for applicable <u>transportation</u> projects that result in such conflicts:</p> <p><b>LU-1</b> Setbacks, fences, or other appropriate means shall be used to separate transportation facilities with the potential to generate land use conflicts <del>from</del> <u>with</u> adjacent sensitive land uses. Roadways shall be designed to minimize potential impacts to pedestrians and bicyclists, particularly those living in adjacent residential areas, or attending nearby schools. Adequate striping, signs, and signalization shall be installed to slow traffic where appropriate and to reduce safety and noise impacts. The jurisdiction through which the proposed impacting roadway traverses would be responsible for implementing this measure, which may in part be based on project-specific noise and safety studies required by the local agency.</p> <p>In addition, mitigation measures listed under Impact AES-2, in particular Mitigation Measure AES-2(b), would reduce impacts related to street lighting adjacent to sensitive land uses. Mitigation measures listed under Impact AQ-1 and AQ-3 in Section 4.2, Air Quality, would reduce localized air quality impacts. And, mitigation measures listed under Impacts N-1, N-2, and N-3, in Section 4.11, Noise, would reduce potential noise impacts.</p>	<p>Class III, <i>Less than Significant.</i></p>
<p><b>Impact LU-2</b> Implementation of proposed transportation improvements <del>and the land use scenario</del> envisioned by the 2014 RTP-SCS could temporarily and permanently displace or disrupt existing residences and businesses. This is considered a Class II, <i>significant but mitigable</i> impact.</p>	<p>The following measures are recommended by KCAG to reduce potential impacts related to temporary disturbance to and permanent displacement of residences and businesses. Sponsor agencies can and should implement the following mitigation measure for applicable <u>transportation</u> projects that result in temporary disturbance and displacement.</p> <p><b>LU-2(a)</b> The project sponsor of 2014 RTP-SCS projects with the potential to displace residences or businesses should assure that project-specific environmental reviews consider alternative alignments and developments that avoid or minimize impacts to nearby residences and businesses.</p> <p><b>LU-2(b)</b> Where project-specific reviews identify displacement or relocation impacts that are unavoidable, the project sponsor should ensure that all applicable local, state, and federal relocation programs are used to assist eligible persons to relocate. In addition, the local jurisdiction shall review the proposed construction schedules to ensure that adequate time is provided to allow affected</p>	<p>Class III, <i>Less than Significant.</i></p>



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

Impact	Mitigation Measures	Significance After Mitigation
	<p>businesses to find and relocate to other sites.</p> <p><b>LU-2(c)</b> For all 2014 RTP-SCS projects that could result in temporary lane closures or access blockage during construction, a temporary access plan should be implemented to ensure continued access to affected cyclists, businesses, and homes. Appropriate signs and safe access shall be guaranteed during project construction to ensure that businesses remain open.</p>	
<p><b>Impact LU-3</b> The 2014 RTP-SCS would be consistent with applicable adopted state and local goals, policies and regulations. This is a Class III, less than significant, impact.</p>	<p>None required.</p>	<p><i>Class III, Less than Significant.</i></p>
<p><b>Impact LU-4</b> Implementation of proposed transportation improvements and the land use scenario envisioned by the RTP-SCS could redistribute residential and commercial development; however, RTP-SCS projects that are included in local General Plans would not significantly induce growth beyond that already anticipated, as the primary purpose of proposed improvements is to accommodate projected growth. This is a Class III, <i>less than significant</i>, impact.</p>	<p>None required.</p>	<p><i>Class III, Less than Significant.</i></p>
<p><b>Impact LU-5</b> Implementation of proposed transportation improvements and the land use scenario envisioned by the 2014 RTP-SCS could result in the conversion of agricultural lands including Prime Farmland and lands under Williamson Act contract to non-agricultural uses. This is a Class I, <i>significant and unavoidable</i>, impact.</p>	<p>No measures are available to mitigate the loss of agricultural lands, short of eliminating proposed roadways that would traverse or be adjacent to Prime Farmland or Williamson Act lands. The following mitigation measures are recommended by KCAG to reduce, minimize or avoid significant adverse environmental impacts. Sponsor agencies can and should implement the following mitigation measures for applicable <u>transportation</u> projects that result in impacts to agricultural. Project-specific environmental impacts may require these mitigation measures be revised or expanded in response to site-specific conditions:</p> <p><b>LU-5(a)</b> When new roadway extensions or widenings are planned, the project sponsor should assure that project-specific environmental reviews consider alternative alignments that reduce or avoid impacts to Prime Farmlands.</p> <p><b>LU-5(b)</b> Rural roadway alignments shall follow property lines to the extent feasible, to minimize impacts to the agricultural production value of any specific property. Farmers should be compensated for the loss of agricultural production at the margins of lost property, based on the amount of land deeded as</p>	<p><i>Class I, Significant and Unavoidable</i></p>



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

Impact	Mitigation Measures	Significance After Mitigation
	<p>road right-of-way, as a function of the total amount of production on the property.</p> <p><b>LU-5(c)</b> When new roadway extensions are planned in areas that contain sensitive farmland, the local jurisdiction in which the RTP project is located shall assure that project-specific environmental reviews consider the use of agricultural conservation easements on land of at least equal quality and size as compensation for the loss of agricultural land. Agricultural conservation easements could be implemented by directly purchasing easements or donating mitigation fees to a local, regional, or statewide organization or agency whose purpose includes the acquisition and stewardship of agricultural conservation easements.</p>	
<b>NOISE</b>		
<p><b>Impact N-1</b> Construction activity associated with transportation improvement projects, <del>and development</del> envisioned by the 2014 RTP-SCS would create temporary noise level increases in discrete locations throughout the County. Impacts would be Class II, <i>significant but mitigable</i>.</p>	<p>Local noise and vibration general plan policies and ordinance requirements would apply to construction activity associated with <u>transportation projects</u> included within the RTP-SCS. In addition, the following mitigation measures N-1(a) – N-1(e) are recommended by KCAG. Sponsor agencies can and should implement the following mitigation measures for applicable <u>transportation projects</u> that result in noise impacts. Project-specific environmental impacts may require these mitigation measures be revised or expanded in response to site-specific conditions:</p> <p><b>N-1(a)</b> Project sponsors of 2014 RTP-SCS projects shall ensure that, where residences or other noise sensitive uses are located within 800 feet of construction sites, appropriate measures shall be implemented to ensure consistency with local noise ordinance requirements relating to construction. Specific techniques may include, but are not limited to, restrictions on construction timing, use of sound blankets on construction equipment, and the use of temporary walls and noise barriers to block and deflect noise.</p> <p><b>N-1(b)</b> If a particular project within 800 feet of sensitive receptors requires pile driving, the local jurisdiction in which this project is located shall require the use of pile drilling techniques instead, where feasible. This shall be accomplished through the placement of <u>mitigation measures or conditions</u> on the project during its individual environmental review.</p> <p><b>N-1 (c)</b> Project sponsors shall ensure that equipment and trucks used for project construction utilize the best available noise control techniques (including mufflers, use of intake silencers, ducts, engine enclosures and acoustically attenuating shields or shrouds).</p>	<p>Class III, <i>Less than Significant</i>.</p>



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

Impact	Mitigation Measures	Significance After Mitigation
	<p><b>N-1(d)</b> Project sponsors shall ensure that impact equipment (e.g., jack hammers, pavement breakers, and rock drills) used for project construction be hydraulically or electrical powered wherever feasible to avoid noise associated with compressed air exhaust from pneumatically powered tools. Where use of pneumatically powered tools is unavoidable, use of an exhaust muffler on the compressed air exhaust can lower noise levels from the exhaust by up to about 10 dBA. When feasible, external jackets on the impact equipment can achieve a reduction of 5 dBA. Whenever feasible, use quieter procedures, such as drilling rather than impact equipment operation.</p> <p><b>N-1(e)</b> Project sponsors shall locate stationary noise sources <u>such as generators</u> as far from sensitive receptors as possible. Stationary noise sources that must be located near existing receptors will be adequately muffled.</p>	
<p><b>Impact N-2</b> Implementation of the 2014 RTP-SCS would increase traffic-generated noise levels in <del>Kings County</del>the region on roadways which could expose sensitive receptors to noise in excess of normally acceptable levels. This is a Class II, <i>significant but mitigable</i> impact.</p>	<p>The following mitigation measures are recommended by KCAG to reduce, minimize or avoid significant adverse environmental impacts. Sponsor agencies can and should implement the following mitigation measures for applicable projects that result in noise impacts. Project-specific environmental impacts may require these mitigation measures be revised or expanded in response to site-specific conditions.</p> <p><b>N-2(a)</b> If a 2014 RTP-SCS project is located near sensitive uses, the project sponsor shall ensure that a noise survey is conducted to determine potential alternate alignments which allow greater distance from, or greater buffering of, noise-sensitive areas. The noise survey shall be sufficient to indicate existing and projected noise levels, to determine the amount of attenuation needed to reduce potential noise impacts to such uses to an exterior noise level of 65 dBA or less. This shall be accomplished during the project's individual environmental review.</p> <p><b>N-2(b)</b> Where new or expanded roadways are found to expose receptors to noise exceeding normally acceptable levels, the project sponsor shall consider various sound attenuation techniques. The preferred methods for mitigating noise impacts will be the use of appropriate setbacks and sound attenuating building design, including retrofit of existing structures with sound attenuating building materials where feasible. In instances where use of these techniques is not feasible, the use of sound barriers (earthen berms, sound walls, or some combination of the two) will be considered. Long expanses of walls or fences should be interrupted with offsets and provided with accents to prevent monotony. Landscape pockets and pedestrian access through walls should be provided. Whenever possible, a combination of elements should be used, including solid fences, walls, and,</p>	<p>Class III, <i>Less than Significant</i>.</p>



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

Impact	Mitigation Measures	Significance After Mitigation
	landscaped berms. Determination of appropriate noise attenuation measures will be assessed on a case-by-case basis during a project's individual environmental review pursuant to the regulations of the applicable agency.	
<p><del><b>Impact N-3</b> The proposed 2014 RTP-SCS land use scenario would encourage compact development, which may place sensitive receptors in areas with unacceptable noise levels. This is a Class II, <i>significant but mitigable</i> impact.</del></p>	<p><del>Local noise general plan policies and ordinance requirements would apply to development associated with RTP-SCS implementation. The following mitigation measures are recommended by KCAG for future infill and mixed use development pursuant to the RTP-SCS that would result in impacts related noise exposure. Sponsor agencies can and should implement the following mitigation measures for applicable projects that result in noise impacts. Project-specific environmental impacts may require these mitigation measures be revised or expanded in response to site-specific conditions.</del></p> <p><del><b>N-3</b> If a 2014 RTP-SCS project is located in an area with exterior ambient noise levels above local noise standards, the project sponsor shall ensure that a noise study is conducted to determine existing and projected noise levels and feasible attenuation measures needed to reduce potential noise impacts to such uses to an exterior and interior noise level below local standards. Such measures may include, but are not limited to: dual-paned windows, solid-core exterior doors with perimeter weather stripping, air-condition system so that windows and doors may remain closed, and siting exterior doors away from roads. This shall be accomplished during the project's individual environmental review.</del></p>	<p><del>Class III, <i>Less than Significant</i>.</del></p>
<b>TRANSPORTATION AND CIRCULATION</b>		
<p><b>Impact T-1</b> Total vehicle miles traveled on freeways and roadways in 2040 would increase when compared to existing (2013) baseline conditions. However, implementation of the 2014 RTP-SCS would reduce overall VMT, CVMT and average trip time per person when compared to 2040 conditions without the 2014 RTP-SCS. Impacts would be Class III, <i>less than significant</i>.</p>	None required.	Class III, <i>Less than Significant</i> .
<p><b>Impact T-2</b> The 2014 RTP-SCS would generally be consistent with applicable alternative transportation plans and policies. This is a Class III, <i>less than significant</i> impact.</p>	None required.	Class III, <i>Less than Significant</i> .



## PROJECT-SPECIFIC IMPACT SUMMARY

The following table presents a list of projects contemplated in the 2014 RTP-SCS and the anticipated impacts for each project for each issue area. These impacts were determined through review of project concepts and locations relative to identified environmental resources based on field review, literature review, and consultation with local, state, and federal resource agencies. The 2014 RTP-SCS projects were evaluated in relation to the plans, maps, management plans, and inventories of applicable resource protection agencies, including: the California Department of Fish and Wildlife (CDFW) California Natural Diversity Data Base (CNDDDB), Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities, and California State Wildlife Action Plan; United States Fish and Wildlife Service (USFWS) sensitive species lists; the State Office of Historic Preservation (OHP), National Register of Historic Places, and California State Landmarks; the 2035 Kings County General Plan, and the San Joaquin Valley Air Pollution Control District (*SJVAPCD*) *Guide for Assessing and Mitigating Air Quality Impacts*. Mitigation measures were developed based on consultation with these agencies.

Impacts related to Air Quality, Energy, Geology, Greenhouse Gases, Hydrology and Water Resources, Land Use, and Transportation are not listed in the Table ES-2 because impacts related to these issue areas would be common to all project types.



**Table ES-2  
Summary of Project Specific Impacts**

Jurisdiction	Route	Project Location	Project Description	Aesthetics	Biology	Cultural Resources	Environmental Justice	Land Use (Agriculture)	Noise
City of Avenal	Third Ave.	San Joaquin St - SR 33	Overlay and improve curb cuts/ramps						X
City of Avenal	Mariposa St	First to Fifth Ave's	Overlay and improve curb cuts/ramps						X
City of Avenal	Fifth Ave.	Mariposa St. to SR 269	Overlay and improve curb cuts/ramps						X
City of Corcoran	Whitley Ave.	From Otis to Pickerell Ave.	Streetscape, Traffic Calming and Street Improvements			X			X
City of Hanford	W. Lacey Blvd.	Hfd.-Arm to Mall Dr. (Interchange Project)	Widen from 2 to 6 lanes w/ median	X	X	X	X		X
City of Hanford	W. Lacey Blvd.	Greenfield Ave. to Mall Dr.	Rehabilitate / Overlay						X
City of Hanford	13th Ave.	13th Ave. / Grangeville Blvd.	Traffic Signal						X
City of Hanford	6th Street	Between Harris and Brown Sts.	Construct Park-n-Ride Facility		X	X	X		X
City of Hanford	Hfd-Arm Rd.	Hfd.- Arm. / Irwin St.	Traffic Signal						X
City of Hanford	Houston Ave.	Houston / 11th Ave.	Traffic Signal						X
City of Hanford	12th Ave.	Mall Dr. to N. of Lacey	Rehabilitate/ Overlay/ Restripe (4 to 6 lanes)				X		X
City of Hanford	City wide	Various	Bike facility improvements				X		X
City of Hanford	11th Ave.	Ivy St to Grangeville	Rehabilitate / Overlay						X
City of Hanford	11th Ave.	11th / Grangeville Blvd.	Intersection Improvements/Channelization		X	X	X		X
City of Hanford	Douty St.	Douty St / Sixth St	Traffic Signal						X
City of Hanford	City wide	PW Corp. Yard	Electric charging station				X		
City of Hanford	12th Ave.	Houston Ave. to Hfd-Arm	Widen from 2 to 4 lanes w/ median	X	X	X	X		X
City of Hanford	12th Ave.	12th Ave. / Hume Ave.	Traffic Signal						X
City of Hanford	E. Lacey Blvd.	10th Ave. to 9th Ave..	Widen from 2 to 4 lanes w/ left turn pockets		X	X	X		X
City of Hanford	E. Lacey Blvd.	at 9th Ave.	Install Traffic Signals						X





**Table ES-2  
Summary of Project Specific Impacts**

Jurisdiction	Route	Project Location	Project Description	Aesthetics	Biology	Cultural Resources	Environmental Justice	Land Use (Agriculture)	Noise
City of Hanford	E. Lacey Blvd.	9th Ave. to Sierra Dr.	Widen from 2 to 4 lanes w/ left turn pockets		X	X	X		X
City of Hanford	E. Lacey Blvd.	at Sierra Dr.	Install Traffic Signals						X
City of Hanford	Grangeville Blvd.	Douty to 10th Ave.	Rehabilitate / Overlay						X
City of Hanford	W. Lacey Blvd.	12 1/2 Ave. to 13th Ave.	Widen from 2 to 4 lanes w/ median	X	X	X	X		X
City of Hanford	W. Lacey Blvd.	at 12 1/2 Ave	Install Traffic Signals						X
City of Hanford	Redington St.	Lacey Blvd. to Grangeville Blvd.	Rehabilitate / Overlay						X
City of Hanford	Fargo Ave.	BN&SF to 12th Ave.	Widen from 2 to 4 lanes w/ left turn pockets	X	X	X	X		X
City of Hanford	Grangeville Blvd.	12th Ave. to 13th Ave.	Widen from 2 to 4 lanes w/ left turn pockets	X	X	X	X		X
City of Hanford	Grangeville Blvd.	12th Ave. to 13th Ave.	Install Traffic Signals & Pedestrian Facilities						X
City of Hanford	Fargo Ave.	12th Ave. to 13th Ave.	Widen from 2 to 4 lanes w/ left turn pockets	X	X	X	X		X
City of Hanford	Fargo Ave.	12th Ave. to 13th Ave.	Install Traffic Signals & Pedestrian Facilities			X			X
City of Hanford	Grangeville	11th Ave. to 12th Ave.	Rehabilitate / Overlay						X
City of Hanford	Hfd.-Arm Rd	12th Ave. 13th Ave.	Widen from 2 to 4 lanes w/ left turn pockets	X	X	X	X		X
City of Hanford	Hfd.-Arm Rd	at 12th Ave	Install Traffic Signals						X
City of Hanford	12th Ave.	Fargo Ave.to Flint Ave.	Widen from 2 to 4 lanes w/ median	X	X	X	X		X
City of Hanford	12th Ave	Fargo Ave.to Flint Ave.	Install Traffic Signals & Pedestrian Facilities						X
City of Hanford	10th Ave.	Hwy 198 to Grangeville blvd.	Rehabilitate / Overlay						X
City of Hanford	Houston Ave.	10th Ave. to 11th Ave.	Widen from 2 to 4 lanes w /median		X	X	X		X



**Table ES-2  
Summary of Project Specific Impacts**

Jurisdiction	Route	Project Location	Project Description	Aesthetics	Biology	Cultural Resources	Environmental Justice	Land Use (Agriculture)	Noise
City of Hanford	Houston Ave.	10th Ave. to 11th Ave.	Install Traffic Signals & Pedestrian Facilities						X
City of Hanford	10th Ave.	Grangeville to Hwy 43	Rehabilitate / Overlay						X
City of Hanford	Houston Ave.	11th Ave. to 12th Ave.	Widen from 2 to 4 lanes w/ median	X	X	X	X		X
City of Hanford	Houston Ave.	11th Ave. to 12th Ave.	Install Traffic Signals & Pedestrian Facilities						X
City of Hanford	Grangeville Blvd.	10th Ave to 9 1/4 Ave.	Rehabilitate / Overlay						X
City of Hanford	Grangeville Blvd.	9 1/4 Ave. to Hwy 43	Widen from 2 to 4 lanes w/ median	X	X	X	X		X
City of Hanford	Grangeville Blvd.	9 1/4 Ave. to Hwy 43	Install Traffic Signals & Pedestrian Facilities						X
City of Hanford	Fargo Ave.	11th Ave. to Meadow View Ln.	Rehabilitate / Overlay						X
City of Hanford	11th Ave.	Grangeville Blvd. to Fargo Ave.	Rehabilitate / Overlay						X
City of Hanford	9th Ave.	Lacey Blvd. to Grangeville Blvd.	New arterial roadway -4 lanes w/ median	X	X		X	X	X
City of Hanford	9th Ave.	Lacey Blvd. to Grangeville Blvd.	Install Traffic Signals & Pedestrian Facilities						X
City of Hanford	11th Ave.	Lacey Blvd. to Grangeville Blvd.	Rehabilitate / Overlay						X
City of Hanford	11th Ave.	Hfd-Arm Rd. to Lacey Blvd.	Rehabilitate / Overlay						X
City of Hanford	9th Ave.	Grangeville Blvd. to Fargo Ave.	New arterial roadway -4 lanes w/ median	X	X		X	X	X
City of Hanford	9th Ave.	Grangeville Blvd. to Fargo Ave.	Install Traffic Signals & Pedestrian Facilities						X
City of Hanford	11th Ave.	Hfd.- Arm. Rd. to Houston Ave.	Rehabilitate / Overlay						X
City of Hanford	11th Ave.	Houston Ave. to Idaho Ave.	Widen from 2 to 4 lanes w/ left turn pockets	X	X		X		X
City of Hanford	11th Ave.	Houston Ave. to Idaho Ave.	Install Traffic Signals & Pedestrian Facilities						X



**Table ES-2  
Summary of Project Specific Impacts**

Jurisdiction	Route	Project Location	Project Description	Aesthetics	Biology	Cultural Resources	Environmental Justice	Land Use (Agriculture)	Noise
City of Hanford	12th Ave.	Hfd-Arm Rd. to Lacey Blvd.	Rehabilitate / Overlay						X
City of Hanford	12th Ave.	Lacey Blvd. to Grangeville Blvd.	Rehabilitate / Overlay						X
City of Hanford	10th Ave.	Hfd. - Arm. Rd. to Houston Ave.	Widen from 2 to 4 lanes w/ left turn pockets		X		X		X
City of Hanford	10th Ave.	Hfd. - Arm. Rd. to Houston Ave.	Install Traffic Signals & Pedestrian Facilities						X
Kings County	12th Avenue	Liberty St to Grangeville	Plane and Overlay						X
Kings County	Hanford Armona Rd	Front Street to Lemoore Canal	Overlay						X
Kings County	14 <sup>th</sup> Ave	Lacey to School Street	Overlay						X
Kings County	6 <sup>th</sup> Ave	SR 198 To Fargo	Reconstruct 0.5 mile		X			X	X
Kings County	Grangeville Blvd	R41 to 18th	Overlay						X
Kings County	18 <sup>th</sup> Avenue	At Jersey Avenue	Signals and approach work						X
Kings County	Houston Ave	1st to SR43	some grind & patch						X
Kings County	9 ¼ Ave	Grangeville to Lacey	Overlay						X
Kings County	Hanford Armona Rd	Elks Meadow to SR41	Overlay						X
Kings County	Lacey Blvd	At 13 <sup>th</sup> Avenue	Signals and bridge work		X			X	X
Kings County	10 ½ Ave	Kansas to Nevada	widen to 28 feet without increasing number of lanes	X	X		X	X	X
Kings County	Flint Ave	SR43 to 12th	Overlay						X
Kings County	11 th Ave	Houston to Idaho	Overlay						X
Kings County	Kansas Ave	4th Avenue to SR43	Overlay						X
Kings County	Kansas Ave	14th to 16th	Overlay						X
Kings County	14th Ave	School Street to Excelsior	Overlay						X



**Table ES-2  
Summary of Project Specific Impacts**

Jurisdiction	Route	Project Location	Project Description	Aesthetics	Biology	Cultural Resources	Environmental Justice	Land Use (Agriculture)	Noise
Kings County	Avenal Cutoff Rd	Nevada Ave to I-5	Install right turn and acceleration lanes	X	X		X		X
Kings County	County Intersections	Various Locations	Install right turn lanes and flashing beacons		X		X		X
Kings County	10th Ave	Idaho to Kansas	Overlay						X
Kings County	Houston Ave	10th to 10 1/2)	reconstruction		X				X
Kings County	Grangeville Blvd	12 1/2 to 15th	Overlay						X
Kings County	18th Ave	SR198 to Iona	Overlay						X
Kings County	Jackson Ave	SR43 to 11th)	reconstruct 1.5 miles		X				X
Kings County	Jackson Ave	11th to 14th	reconstruct 1 mile		X				X
Kings County	Jackson Ave	14th to 17th (widen to 28 feet)	Overlay						X
Kings County	12th Ave	Hume to Idaho	Overlay						X
Kings County	Excelsior Ave	0.25 mile west of 12th to SR 43	Overlay						X
Kings County	Excelsior Ave	14 1/2 to Kings River	Overlay						X
Kings County	Ward & Hubert Drive, Bernard, Cyril Place	Fargo - 12th to 14th	Overlay						X
Kings County	Grangeville Blvd	SR41 to 22nd Avenue	Overlay						X
Kings County	Houston Ave	SR43 to 10th Avenue	Overlay						X
Kings County	Lacey Blvd	18th to SR41	Overlay						X
Kings County	6th Ave	Utica to Racine	reconstruct 1.5 miles		X				X
Kings County	Laurel Ave	SR41 to 18th Avenue	Overlay						X
Kings County	14th Ave	Houston to Jersey	Overlay						X
Kings County	6th Ave	Kern County Line to 1/2 mile North	Overlay						X
Kings County	Utica Ave	20th to 25th	reconstruct 1 mile		X				X



**Table ES-2  
Summary of Project Specific Impacts**

Jurisdiction	Route	Project Location	Project Description	Aesthetics	Biology	Cultural Resources	Environmental Justice	Land Use (Agriculture)	Noise
Kings County	18th Ave	Iona to Jersey	Install left turn lane	X	X		X		X
Kings County	Front St	Hanford Armona Road to 14th	Overlay						X
Kings County	6th Ave	Fargo to Excelsior	Overlay						X
Kings County	Houston Ave	13th to 14th	Overlay						X
Kings County	Grangeville Blvd	SR43 to 6th	Reconstruct		X				X
Kings County	Grangeville Blvd	5th to 6th	Overlay						X
Kings County	Grangeville Blvd	1st to 2 1/2 Ave	Overlay						X
Kings County	Grangeville Blvd	2 1/2 Ave to Highline Canal	reconstruct		X				X
Kings County	Grangeville Blvd	Highline Canal to 5th Avenue	Overlay						X
Kings County	18th Ave	Laurel to Kansas	Overlay						X
Kings County	10th Ave	Nevada to Pueblo	Overlay						X
Kings County	10th Ave	Redding to Seattle	Overlay						X
Kings County	10th Ave	Pueblo to Redding	Overlay						X
Kings County	10th Ave	Seattle to Utica	CMAQ Seal Coat						X
Kings County	14th Ave	Jersey to Kansas	Overlay						X
Kings County	Excelsior Ave	SR 41 to 22nd	Overlay						X
Kings County	Excelsior Ave	R43 to 6th	reconstruct 1 mile		X				X
Kings County	Laurel Ave	Avenal Cut-off to SR41	Overlay						X
Kings County	Nevada Ave	Avenal Cut-off to SR41	Overlay						X
Kings County	Avenal Cut Off	SR 198 to 25th	Overlay						X
Kings County	9th Ave	R198 to Houston	Overlay						X
Kings County	Utica Ave	11th to 16th	Overlay						X



**Table ES-2  
Summary of Project Specific Impacts**

Jurisdiction	Route	Project Location	Project Description	Aesthetics	Biology	Cultural Resources	Environmental Justice	Land Use (Agriculture)	Noise
Kings County	6th Ave	Utica to Virginia	Overlay						X
Kings County	6th Ave	Virginia to Xavier Ave	Overlay						X
Kings County	6th Ave	Kern County Xavier Ave	Overlay						X
Kings County	Virginia Ave	4th to 6th	Overlay						X
Kings County	Utica Ave	16th to 20th	Overlay						X
Kings County	Utica Ave	6th to 11th	Overlay						X
KCAPTA	13	Hanford/Stratford/Kettleman/Avenal	Add morning route				X		X
KCAPTA	12	Hanford/Corcoran	Add morning route				X		X
KCAPTA		County wide	Bus intelligent system				X		X
Lemoore	Smith Street	Magnolia St. to Oleander Dr.	Overlay						X
Lemoore	CNG Station	CNG Station	Expansion - Purchase Storage Vessel				X		
Lemoore	Cinnamon Drive	19th Ave to Hill Dr.	Bicycle/Pedestrian Facilities		X		X		X
Lemoore	Bush and 19 1/2 Ave	Intersection	Install Traffic Signal						X
Lemoore	Bush & Belle Haven	Intersection	Install Traffic Signal						X
Lemoore	19th and Cedar	Intersection	Install Traffic Signal						X
Lemoore	Hanford-Armona Rd and Cinnamon	Intersection	Install Traffic Signal						X
Lemoore	Fox and Cinnamon	Intersection	Install Traffic Signal						X
Lemoore	19 <sup>th</sup> Avenue	Bush Street to Cedar Lane	Overlay						X
Lemoore	Bush Street	19 ½ Ave. to 19 <sup>th</sup> Ave.	Overlay						X
Lemoore	C Street	Olive St to Hill St.	Overlay						X
Lemoore	Cedar Lane	19 <sup>th</sup> Ave. to Mallard	Overlay						X



**Table ES-2  
Summary of Project Specific Impacts**

Jurisdiction	Route	Project Location	Project Description	Aesthetics	Biology	Cultural Resources	Environmental Justice	Land Use (Agriculture)	Noise
Lemoore	Cinnamon Drive	Basil St. to Daphne Lane	Overlay						X
Lemoore	Vine Street	Bush St. to SR 198	Overlay						X
Lemoore	Hickory Drive	Vine St. to Oakdale Lane	Overlay						X
Lemoore	Silverado Drive	19 <sup>th</sup> Ave. to Marin Dr.	Overlay						X
Lemoore	Olive Ave.	B St. to Redwood Ln.	Overlay						X
Lemoore	Oakdale Lane	Vine St. to Lum Ave.	Overlay						X
Lemoore	E Street	Fox St. to D St.	Overlay						X
Lemoore	W. Deodar Lane	Spruce Ave to Glendale Ave.	Overlay						X
Lemoore	S. Byron Ave	Bush St to South End	Overlay						X
Lemoore	Cambridge Drive	Bush St. to Olive St.	Overlay						X
Lemoore	E. D Street	Lemoore Ave to Smith St.	Overlay						X
Lemoore	W. Burlwood Lane	Lemoore Ave. to Juniper Lane	Overlay						X
Lemoore	Bush Street	Lemoore Ave. to D St.	Overlay						X
Lemoore	W. D Street	Bush St. to Olive St.	Overlay						X
Lemoore	Hanford Armona Road	Lemoore Ave to Liberty Dr.	Overlay						X
Lemoore	Hanford Armona Road	Liberty Drive to 19 <sup>th</sup> Ave.	Overlay						X
Lemoore	Hanford Armona Road	19 <sup>th</sup> Ave to SR 41	Overlay						X
Lemoore	Iona Ave.	Vine St. to 19 <sup>th</sup> Ave	Overlay						X
Lemoore	Lemoore Ave	SR 198 to Bush St.	Overlay						X
Lemoore	Lemoore Ave.	UPRR to Cinnamon Drive	Overlay						X



## 1.0 INTRODUCTION

### 1.1 STATEMENT OF PURPOSE

This Program Environmental Impact Report (PEIR) identifies and describes potential environmental impacts associated with implementation of the 2014 Regional Transportation Plan and Sustainable Communities Strategy (RTP-SCS) proposed by the Kings County Association of Governments (KCAG).

Section 21000 of the California Government Code, commonly referred to as the California Environmental Quality Act of 1970 (CEQA), requires the evaluation of environmental impacts associated with all planning programs or development projects proposed. As such, this EIR is an informational document for use by KCAG, other agencies, and the general public in their consideration and evaluation of the environmental consequences of implementing of the proposed 2014 RTP-SCS.

### 1.2 PROJECT BACKGROUND

The proposed 'project' is the preparation of the 2014 RTP-SCS. KCAG has prepared 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, "Moving Ahead for Progress in the 21st Century" (MAP-21), the Transportation Conformity for 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, and Senate Bill 375, The Sustainable Communities and Climate Protection Act of 2008. KCAG's previous RTP was adopted on July 28, 2010.

The 2011 RTP update programmed available transportation funding to 2035 and included lists of programmed transportation projects to improve the transportation system during the 2011-2035 planning period. Among these listed projects were highway, road and street projects; pedestrian and bikeway projects; aviation, rail and transit projects. Although a number of projects from the 2011 RTP have been completed, many have not. Additionally, new projects have been incorporated into the 2014 RTP-SCS.

The 2014 RTP-SCS is the culmination of a multiyear effort focused on improving mobility within Kings County. The SCS is intended to balance land use and transportation systems to reduce emissions from cars and light trucks. KCAG is required by federal law to develop an RTP that determines the needs of the transportation system and prioritizes proposed transportation projects. The RTP-SCS is also necessary to obtain and allocate federal funding for regional transportation projects.

#### **RTP Framework**

The unified strategy within the 2014 RTP-SCS would include the following key elements:





- A comprehensive description of the region's current and future challenges in accommodating growth and meeting mobility needs.
- A fiscally-constrained transportation network that consists of US and State Highways, local roadways, bicycle and pedestrian facilities, public transit, airports, and passenger and freight rail.
- An integrated land use capacity analysis that accommodates the region's future employment and housing needs and protects sensitive habitat and resource areas.
- A financial plan that lays out the funding sources and mechanisms required to implement the strategies of the RTP-SCS. The financial plan also recommends additional innovative financing strategies that can be implemented to carry out additional needed projects and programs.
- A transportation system performance evaluation that lays out the ability of the proposed strategies to address challenges.
- The compendium of projects, policies and programs which aim to meet the transportation needs of the region while reducing congestion and improving air quality comprise the 2014 RTP-SCS.

### **Sustainable Communities Strategy/Alternative Planning Strategy**

The 2014 RTP includes a Sustainable Communities Strategy (SCS) pursuant to SB 375. Under SB 375, metropolitan planning organizations (MPOs) such as KCAG are required to develop an SCS as part of the RTP to reduce, to the extent feasible, greenhouse gas emissions from cars and light trucks to meet a specified target for 2020 and 2035. The California Air Resources Board (ARB) issued KCAG a regional GHG target of a 5% reduction in per capita GHG emissions for the planning year 2020 and a 10% reduction in per capita GHG emissions in planning year 2035, as compared to baseline per capita emissions levels in 2005.

The GHG reductions are to be derived from fewer and/or shorter automobile and light truck trips resulting from integrated transportation, land use, housing and environmental planning. If the reduction targets established by CARB cannot be feasibly met, an Alternative Planning Strategy (APS) is required to be prepared by KCAG to show how the targets would be achieved through alternative development patterns, infrastructure, or additional transportation measures or policies. Furthermore, SB 375 requires that the SCS identify general land uses (consistent with the General Plan land use and zoning designations of the local agencies), residential densities, and building intensities as well as areas to house future residents. Specifically, the SCS does the following:

- Identifies the general location of uses, residential densities, and building intensities within the region;
- identifies areas within the region sufficient to house the forecast population over the course of the planning period of the regional transportation plan;
- identifies areas within the region sufficient to house an eight-year projection of the regional housing need for the region;
- identifies a transportation network to service the transportation needs of the region;
- gathers and considers resource areas and farmland in the region;

- sets forth a forecasted development pattern for the region, which, when integrated with the transportation network, will reduce GHG emissions from automobiles and light trucks; and
- quantifies the reduction in GHG emissions projected to be achieved by the SCS and, if the SCS does not achieve the targeted reductions, sets forth the difference between the amount that the SCS would reduce GHG emissions and the target for the region.

KCAG does not propose any land use changes, but rather the land use patterns envisioned by the RTP-SCS are based on the General Plan land use and zoning designations of the local agencies (the four incorporated cities and the county). The RTP-SCS would be consistent with the land use and zoning designations in the incorporated and unincorporated areas.

In compliance with the CEQA Guidelines (Section 15063), KCAG, as the Lead Agency responsible for the 2014 RTP-SCS, solicited preliminary public agency comments on the project through distribution of a Notice of Preparation (Appendix A) and receipt of public comments during a scoping meeting held on November 6, 2013 in the Lemoore Center of the Kings County Schools Administration located at 876 E D Street, Lemoore, CA 93245.

### 1.3 TYPE OF ENVIRONMENTAL DOCUMENT

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

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

As a programmatic document, this EIR presents a region-wide assessment of the impacts of the proposed 2014 RTP-SCS. Analysis of site-specific impacts of individual projects is not the intended use of a program EIR. Many specific projects are not currently defined to the level that would allow for such an analysis. Individual specific environmental analysis of each project will be undertaken as necessary by the appropriate implementing agency prior to each project being considered for approval. This program EIR serves as a first-tier environmental document under CEQA supporting second-tier environmental documents for:

- Transportation projects developed during the engineering design process; and
- Residential or mixed use projects and transit priority projects consistent with the SCS.

Project sponsors implementing subsequent projects would undertake future environmental review for projects in the proposed 2014 RTP-SCS. These agencies would include the cities within Kings County as well as Kings County, Caltrans, and public transit agencies. In sponsoring individual projects, local agencies may choose to take advantage of the streamlining benefits of the Program EIR, or to engage in their own environmental review without use or reference to the Program EIR. If they so choose, these agencies would be able to prepare



subsequent environmental documents that incorporate by reference the appropriate information from this Program EIR regarding secondary effects, cumulative impacts, broad alternatives, and other relevant factors. If the lead agency finds that implementation of a later activity would have no new effects and that no new mitigation measures would be required, that activity would require no additional CEQA review. Where subsequent environmental review is required, such review would focus on project-specific significant effects peculiar to the project, or its site, that have not been considered in this program EIR.

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

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

## 1.4 EIR CONTENT AND FORMAT

This document includes discussions of environmental impacts related to several issue areas. The analysis of environmental impacts identifies impacts by category: significant and unavoidable (Class I), significant but mitigable (Class II), adverse but less than significant (Class III), and beneficial (Class IV). It proposes mitigation measures, where feasible, for identified significant environmental impacts.

The CEQA Guidelines also require the analysis of the cumulative effects of a project in combination with other foreseeable development in the area. Section 15130 of the State CEQA Guidelines prescribes two methods for analyzing cumulative impacts: (1) use of a list of past, present, and reasonably anticipated future projects producing related or cumulative impacts; or (2) use of a summary of projections contained in an adopted general plan or related planning document. However, this document is a Program EIR that analyzes the effects of cumulative buildout of the 2014 RTP-SCS. The proposed 2014 RTP-SCS considers the past, present, and future projects described in method 1 above and proposes a range of specific land use and transportation projects designed to meet the plan goals and current and projected future transportation infrastructure needs. The project also constitutes the cumulative scenario described in method 2. Therefore, the cumulative effects of all circulation system improvements in the region are included in the analysis of the proposed project's impacts. The analysis of project impacts contained in this "first tier" environmental review document will form the basis for the cumulative analysis contained in any subsequent environmental documentation for specific projects proposed under the 2014 RTP-SCS. This EIR has been organized into the following seven sections:

- 1.0 Introduction - Provides the Statement of Purpose, project background, and information about the EIR content and format.



- 2.0 Project Description - Identifies the project applicant, presents and discusses the project objectives, project location and specific project characteristics.
- 3.0 Environmental Setting - Provides a description of the existing physical setting of the project area and an overview of the progress in implementing the 2010 RTP.
- 4.0 Analysis of Environmental Issues - Describes existing conditions found in the project area and assesses potential environmental impacts that may be generated by implementing the proposed project and cumulative development in Kings County. These potential project impacts are compared to “thresholds of significance” to determine the nature and severity of the direct and indirect impacts. Mitigation measures, intended to reduce adverse, significant impacts below threshold levels, are proposed where feasible. Impacts that cannot be eliminated or mitigated to less-than-significant levels are also identified.
- 5.0 Other CEQA-Required Discussions - Identifies the spatial, economic, or population growth impacts that may result from implementation of the proposed project, as well as long-term effects of the project and significant irreversible environmental changes.
- 6.0 Alternatives - Presents and assesses the potential environmental impacts of three alternatives analyzed in addition to implementation of the proposed 2014 RTP-SCS.
- 7.0 References/Preparers - Lists all published materials, federal, State, and local agencies, and other organizations and individuals consulted during the preparation of this EIR. It also lists the EIR preparers.

## 1.5 EIR BASELINE AND APPROACH FOR IMPACT ANALYSIS

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

This EIR evaluates impacts against existing conditions at the time of the release of the NOP (November, 2013) for issue areas that would not be substantially influenced by future regional growth that would occur with or without implementation of the 2014 RTP-SCS. It was determined that for these issues a comparison to existing baseline conditions would provide the most relevant information for the public, responsible agencies, and KCAG decision-makers. These issue areas include:

- Aesthetics
- Air Quality
- Biological Resources
- Geology/Soils
- Greenhouse Gas/Climate Change
- Hydrology/Water Resources



- Cultural Resources
- Energy
- Environmental Justice
- Land Use
- Noise
- Transportation and Circulation

For the air quality, energy, greenhouse gas, noise, and traffic environmental impacts resulting from the Program, this EIR evaluates potential impacts against both (1) a forecast future baseline condition and (2) current, existing baseline conditions, controlling for impacts caused by population growth and other factors that would occur regardless of whether the 2014 RTP-SCS is adopted. The 2014 RTP-SCS is a long-term, 26-year plan that proposes transportation projects ~~and land use patterns~~ to the year 2040. It is important to emphasize that population growth, urbanization, and volume of average daily traffic generated in Kings County will increase by 2040, with or without implementation of the 2014 RTP-SCS, as a result of a range of demographic and economic factors independent of policy ~~and land use~~ decisions by KCAG and land use decisions by its member agencies.

An analysis that attributed physical environmental impacts solely to the 2014 RTP-SCS that are in fact the result of future regional growth that would occur in the absence of the 2014 RTP-SCS would overstate the impacts caused by the 2014 RTP-SCS. For this reason, certain environmental issues analyzed in the EIR compare future conditions including the 2014 RTP-SCS with the expected future conditions without the 2014 RTP-SCS (the “future baseline”) as well as to the current baseline, controlling for future regional growth that would occur independently of the 2014 RTP-SCS. These comparisons isolate environmental effects potentially resulting from the 2014 RTP-SCS from those caused by future growth that would occur regardless of the 2014 RTP-SCS, as compared to existing 2013 baseline conditions. Further, the anticipated growth associated with General Plan land use and zoning designations of the local agencies has already undergone individual environmental review by each agency. Thus while this EIR considers the land use component of the SCS, no changes to land use are proposed by the RTP-SCS and thus no environmental impacts related to land use and land development, beyond those identified and disclosed previously by the local agencies when reviewing impacts for in their General Plan ~~land uses~~EIRs, would occur.

Thus, the identification of potential impacts and mitigation measures for these environmental issue areas are based on the increment of physical change resulting from the 2014 RTP-SCS, rather than the future regional growth that would occur regardless of whether the plan is adopted and implemented. The environmental issue areas for which this approach is used include the following:

- Air Quality
- Energy
- Greenhouse Gases Emissions/Climate Change
- Noise
- Transportation and Circulation

### **Interim Timeframes**

The year 2040 is considered to be the horizon year of the proposed 2014 RTP-SCS. While the plan will be implemented gradually over the planning period, this EIR does not analyze interim



time frames because the four-year update cycle of the RTP-SCS already requires short-term adjustments to the plan. The one exception to this approach is in Section 4.8, *Greenhouse Gas Emissions/Climate Change*, which examines impacts for the year 2020 as well as 2040, and in comparison to a baseline of 2005 to satisfy statutory requirements and state goals related to GHG emissions (Health & Safety Code, § 38551(b)).

## **1.6 INCORPORATION BY REFERENCE**

Consistent with CEQA Guidelines Section 15150, this EIR incorporates by reference documents which are a matter of public record and generally available to the public. These documents include:

- Kings County. 2010. Kings County General Plan. Accessible at: <http://www.countyofkings.com/departments/community-development-agency/information/2035-general-plan>
- Kings County. 2010. Kings County General Plan EIR. Accessible at: <http://www.countyofkings.com/home/showdocument?id=5897>
- -Hanford 2002 General Plan Update. Accessible at: <http://www.ci.hanford.ca.us/about/general.asp>
- City of Lemoore, 2008, Lemoore General Plan and 2008 EIR. Accessible at: [http://www.lemoore.com/planning/general\\_plan.htm](http://www.lemoore.com/planning/general_plan.htm)
- City of Avenal, 2004, Avenal General Plan and Environmental Impact Report. Hard copy available at: Avenal City Hall, 919 Skyline Boulevard, Avenal, CA 93204.
- City of Corcoran, 2007, General Plan Update and EIR. Accessible at: <http://www.cityofcorcoran.com/civica/filebank/blobdload.asp?BlobID=3439>

As noted in CEQA Guidelines Section 15150, where all or part of another document is incorporated by reference, the incorporated language shall be considered to be set forth in full as part of the text of the EIR. These documents are discussed and utilized in the setting and impact analysis of this EIR as they related to aesthetics, air quality, agricultural resources, biological resources, cultural resources, energy, environmental justice, geology, greenhouse gases, hydrology and water resources, land use, noise, and transportation and are included in sections 4.1 through 4.12 in the EIR. These documents are also listed in the references section in Section 7.0, *References and Report Preparers*.



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## 2.0 PROJECT DESCRIPTION

### 2.1 PROJECT SPONSOR

Kings County Association of Governments (KCAG)  
339 W. "D" Street, Suite B  
Lemoore, CA 93245

### 2.2 PROJECT OBJECTIVES

The Kings County Association of Governments (KCAG), as both the federally-designated metropolitan planning organization (MPO) and the State-designated regional transportation planning agency (RTPA) for Kings County, is required by both federal and State law to prepare a long-range (at least 20-year) transportation planning document known as a Regional Transportation Plan (RTP). The RTP is an action-oriented document used to achieve a coordinated and balanced regional transportation system. California Government Code §65080 et seq. and Title 23 United States Code (USC) §134 require Regional Transportation Planning Agencies (RTPA) and Metropolitan Planning Organizations (MPO) to prepare long-range transportation plans to: 1) establish regional goals, 2) identify present and future needs, deficiencies and constraints, 3) analyze potential solutions, 4) estimate available funding, and 5) propose investments. State Statutes require that the RTP serve as the foundation for the short-range transportation planning documents: the Regional and Federal Transportation Improvement Programs (RTIP and FTIP).

The California Transportation Commission's (CTC) document *2010 California Regional Transportation Plan Guidelines* serves as the guidance for RTP development. Under both federal and State law, KCAG must update its RTP every four years. The 2014 Regional Transportation Plan and Sustainable Communities Strategy (RTP-SCS) is the long-range planning, policy, action, and financial document for the Kings County Region. The RTP-SCS covers a 26-year period from 2014 to 2040 and is an update of the 2011 RTP. The RTP-SCS identifies the region's transportation needs and issues and sets forth actions, programs, and projects to address those needs and issues. The RTP-SCS adopts policies, sets goals, and identifies financial resources to encourage and promote the safe and efficient management, operation, and development of a regional intermodal transportation system that would serve the mobility needs of goods and people. In addition, as the MPO for Kings County, KCAG is required to prepare a Sustainable Communities Strategy (SCS) that demonstrates how greenhouse gas (GHG) reduction targets will be met through integrated land use, housing, and transportation planning. Thus the RTP-SCS will address both the transportation component of the RTP, as well as the land use component of the SCS. It should be noted that KCAG does not propose any land use changes, but rather the land use patterns envisioned by the RTP-SCS are based on the General Plan land use and zoning designations of the local agencies (the four incorporated cities and the county). The RTP-SCS would be consistent with the land use and zoning designations in the incorporated and unincorporated areas. Further, the land use and zoning designations of the local agencies have already undergone individual environmental review by each agency. Thus while this EIR considers the land use component of the SCS, no changes to land use are proposed by the RTP-SCS and thus no environmental impacts related to land use and land





development, beyond those identified and disclosed previously by the local agencies when reviewing impacts for in their General Plan EIRs and uses, would occur.

## SB 375 Requirements

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

- The CTC must maintain guidelines for the travel demand models that MPOs develop for use in the preparation of their RTPs;
- The ARB must develop regional GHG emission reduction targets for automobiles and light trucks for 2020 and 2035 by September 30, 2010 (completed);
- Each MPO must prepare an SCS as part of its RTP to demonstrate how it will meet the regional GHG targets;
- Each MPO must adopt a public participation plan for development of the SCS that includes informational meetings, workshops, public hearings, consultation, and other outreach efforts;
- If an SCS cannot achieve the regional GHG target, the MPO must prepare an Alternative Planning Strategy (APS) showing how it would achieve the targets with alternative development patterns, infrastructure, or transportation measures and policies;
- Each MPO must prepare and circulate a draft SCS at least 55 days before it adopts a final RTP;
- After adoption, each MPO must submit its SCS to the ARB for review; and
- ARB must review each SCS to determine whether, if implemented, it would meet the GHG targets. ARB must complete its review within 60 days.

ARB set targets for each of the 8 San Joaquin Valley MPO's, including KCAG, as a 5% reduction from 2005 emissions levels by 2020 and a 10% reduction from 2005 emissions levels by 2035. These targets apply to the KCAG region as a whole for all on-road light-duty trucks and passenger vehicles emissions, and not to individual cities or sub-regions.

SB 375 specifically states that local governments retain their autonomy to plan local General Plan policies and land uses. The 2014 RTP-SCS provides a regional policy foundation that local governments may build upon, if they so choose. The 2014 RTP-SCS includes and accommodates the quantitative growth projections for the region. However, the RTP-SCS would not result in environmental impacts related to land use or growth associated with local land use changes as those impacts have already been reviewed and analyzed in individual CEQA documents prepared by local agencies. SB 375 also requires that the RTP-SCS's forecasted development pattern for the region be consistent with the eight-year regional housing needs as allocated to member jurisdictions through the Regional Housing Needs Allocation (RHNA) process under State housing law.



In addition, this EIR lays the groundwork for the streamlined review of qualifying development projects within Transit Priority Areas.<sup>1</sup> Qualifying projects that meet statutory criteria and are consistent with the 2014 RTP-SCS are eligible for streamlined environmental review pursuant to CEQA.

## MAP-21

The most recent federal transportation legislation, the Moving Ahead for Progress in the 21<sup>st</sup> Century Act (MAP-21), was enacted in 2012. Through the RTP development process, MAP-21 encourages KCAG to:

*Consult with officials responsible for other types of planning activities that are affected by transportation in the area (including State and local planned growth, economic development, environmental protection, airport operations, and freight movements) or to coordinate its planning process, to the maximum extent practicable, with such planning activities.<sup>2</sup>*

Specifically, MAP-21 requires that the RTP planning process:

*Provide for consideration of projects and strategies that will:*

- *support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;*
- *increase the safety of the transportation system for motorized and non-motorized users;*
- *increase the security of the transportation system for motorized and non-motorized users;*
- *increase the accessibility and mobility of people and freight;*
- *protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns;*
- *enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;*
- *promote efficient system management and operation; and*
- *emphasize the preservation of the existing transportation system.<sup>3</sup>*

The 2014 RTP-SCS discusses in detail how these requirements are met.

## Environmental Justice

KCAG is required to address social equity and environmental justice in the RTP. The legal basis for environmental justice stems from the Civil Rights Act of 1964, along with Executive Order 12898 (February 1994), which states that “each Federal agency shall make achieving

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<sup>1</sup> A Transit Priority Area is an area within ½-mile of high quality transit: a rail stop or a bus corridor that provides or will provide at least 15-minute frequency service during peak hours by the year 2035.

<sup>2</sup> 23 U.S.C. §134(g)(3)(A).

<sup>3</sup> 23 U.S.C. §134(h)(1).



environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.” KCAG must evaluate how the 2014 RTP-SCS might impact minority and low-income populations, and must ensure that the 2014 RTP-SCS does not have a disproportionate adverse impact on such populations.

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

### **Regional Transportation Plans**

As noted, the procedures for developing RTPs are provided in the CTC’s Regional Transportation Plan Guidelines (2010). The guidelines identify the purpose of an RTP to be as follows:

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

RTPs must include long-term horizons (at least 20 years) that reflect regional needs, identify regional transportation issues/problems, and develop and evaluate solutions that incorporate all modes of travel. RTPs must also recommend a comprehensive approach that provides direction for programming decisions to meet the identified regional transportation needs. RTPs must also be fully consistent with the requirements of MAP 21 and other federal regulations, including conformity with the 1990 Clean Air Act Amendments and consistency with the Federal Transportation Improvement Program (FTIP). The objective of the 2014 RTP is to comply with the current CTC Regional Transportation Plan Guidelines, pursuant to Government Code Section 14522, to prepare a regional transportation plan, a long-range transportation planning document which will provide policy guidelines regarding the planning and programming of transportation projects within Kings County through 2040.

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

### **Local Objectives**

The 2014 RTP-SCS establishes planning goals and objectives to guide the development of the plan and establish the guiding principles for decision-making. Regional projects and programs are developed, funded, and implemented based on these goals. For each goal there is a subset of objectives that describe what needs to be accomplished to reach the goals. Each goal area also includes performance measures to assess progress towards accomplishing goals and objectives.

## **2.3 PROJECT LOCATION**

The County of Kings is located in the San Joaquin Valley portion of the Great Central Valley of California that lies south of the Sacramento-San Joaquin Delta, and is comprised of 1,391 square miles. Figure 2-1 shows Kings County's relationship to the State Route system, nearby counties, cities and communities. The study area includes all of Kings County's 1,391 square miles. There are four incorporated cities within the boundaries of Kings County, including Avenal, Corcoran, Hanford, and Lemoore. A description of the study area is provided in Section 3.0, Environmental Setting.

Kings County is one of eight counties that comprise the San Joaquin Valley, and is bounded on the west by the Coast Ranges; the Sierra Nevada Mountain range to the east; the Tehachapi's to the south; and the Sacramento Valley to the north. The San Joaquin Valley supports extensive farmland practices. Kings County's farm land area is level irrigated farmland that averages well over \$1 billion per year in commercial crop production.

Within the San Joaquin Valley, Kings County is bordered by Fresno County to the north and west; Kern County to the south; Tulare County to the east; and Monterey County and San Luis Obispo County to the southwest. Elevations range from 175 feet in the Tulare Lake Basin to 3,473 feet at the extreme southwestern portion of the County in the Coast Ranges.

## 2.4 PROJECT CHARACTERISTICS

The most recent RTP was adopted in 2011. The 2014 RTP-SCS reflects changes in legislative requirements, local land use policies, and resource constraints. The 2014 RTP-SCS plans how KCAG will meet its transportation needs for the period from 2014 to 2040, considering existing and projected future land use patterns as well as forecast population and job growth. The 2014

RTP-SCS plans for and programs the approximately \$543 million in revenues expected to be available to KCAG from all transportation funding sources over the course of the planning period. It identifies and prioritizes expenditures of this anticipated funding for transportation projects that involve all transportation modes: highways, streets and roads, transit, rail, bicycle and pedestrian; aviation, as well as transportation demand management (TDM) and transportation system management (TSM).

To fully explore these directives, and to address the requirements of state legislation, specifically Senate Bill 375, each RTP must contain four basic elements. The 2014 RTP considers plans, projects, and the integration of land use and transportation in the following elements:

### 1. Policy Element

- To identify regional transportation goals, policies, and objectives.
- To present significant regional transportation issues.
- To consider the natural environment, social, and economic factors.
- To show implications, impacts, and opportunities that will result from the implementation of the plan.

### 2. Action Element

- To set forth an action plan to address issues and needs identified in the policy element.
- To show regional transportation improvements in order to aid in the development of a statewide improvement program. The actions are broken down into five, ten, and twenty year time periods to assist in development of the Regional Transportation Improvement Program.
- To provide guidance in making decisions related to regional growth and development.
- To identify responsibilities for project implementation.

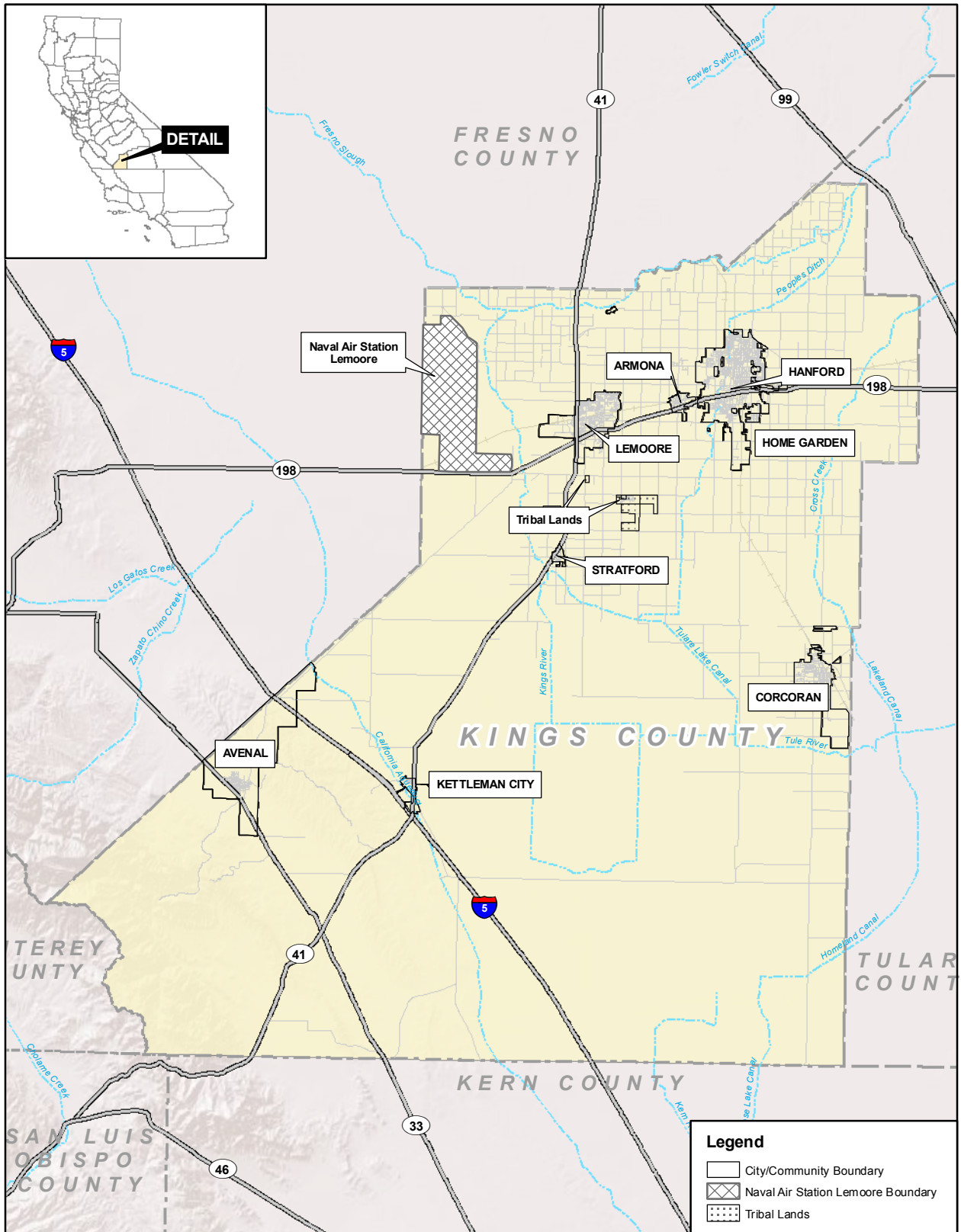
### 3. Financial Element

- To provide cost and revenue assumptions needed to implement the plan.
- To identify revenue sources.
- To analyze the development of new revenue sources.
- To compare costs with anticipated revenues.

### 4. Sustainable Communities Strategy

- Document the Greenhouse Gas emission reductions
- Integrate local agency land use decisions with the transportation system
- Comprehensive and inclusive public outreach





Base map source: Map images copyright © 2010 ESRI and its licensors. All rights reserved. Used by permission. U.S. Bureau of the Census TIGER 2000 data.

County and Regional Map

Figure 2.1

The 2014 RTP-SCS is divided into twelve chapters and four appendices dealing with Kings County exclusively, and one appendix pertaining to the San Joaquin Valley. Five chapters concentrate on a specific modal area of transportation. For information purposes only, Appendix I is an inventory of regional routes that includes general information such as current road conditions and traffic factors. The following summarizes the twelve chapters:

**Chapter 1: Introduction.** This chapter describes KCAG's organization; the organization, background, and purpose of the plan; the regional setting; the plan's relationship to other local and state plans; and the Public Participation Process.

**Chapter 2: Overview of Transportation Planning and Programming.** This chapter offers an understanding of how KCAG will approach transportation problems and come to decisions and recommendations. It sets forth the basic socioeconomic facts of Kings County; spells out important transportation planning and programming issues which KCAG must consider; and establishes a central goal to guide KCAG's planning.

**Chapter 3: Policy Element.** This chapter identifies and defines objectives and policies needed to carry out the goals and to respond to the issues of the Regional Transportation Plan concerning each mode.

**Chapter 4: The Regional Highway System.** This chapter focuses on the most used, and therefore the most significant, component of Kings County's transportation system: the highway system. The 2014 RTP does not study all roads in Kings County. Instead, it identifies the most-used routes which serve regional, rather than merely local, transportation demands. The purpose of this chapter is to document needs and recommend improvements for these regional routes. The issue of how a potential local county sales tax measure, or funding mechanisms such as Senate Bill (SB) 406 (Land Use: Environmental Quality Act) funds will affect the programming of State Transportation Improvement Program (STIP) projects for Kings County will be considered (SB 406 authorizes an additional fee of \$1 or \$2 on vehicle registration through an existing fee mechanism to be used for planning purposes). This chapter also provides a list of State Highway projects contained in the STIP and projects proposed for future "Regional Transportation Improvement Programs" (RTIP).

**Chapter 5: Goods Movement.** This chapter examines ways to ensure that freight and commodities are efficiently transported through Kings County and the region. The majority of this chapter considers the two significant modes used for goods movement: railroads and freight trucks. Special attention is given to the needs of the agricultural industry in moving its products and the transportation of hazardous materials through Kings County.

**Chapter 6: Public Transportation.** This chapter provides an inventory of the various public transportation (transit) providers in Kings County. It gives special emphasis to issues surrounding Amtrak and transit services provided by local providers, and discusses ways to meet identified unmet transportation needs. It includes a summary of the findings and policies of KCAG's "2008 Transit Development Plan".

**Chapter 7: Aviation.** This chapter provides an inventory of public, private, and military air facilities in Kings County. Special attention is given to the role of public airports, the RTP



relationship to the local and regional aviation plans, and to the impact of the F/A-18 aircraft deployed at the Lemoore Air Station.

**Chapter 8: Non-Motorized Facilities.** This chapter describes opportunities to foster bicycle commuting in Kings County. It is a summary of the findings and policies of KCAG’s “2011 Regional Bicycle Plan.”

**Chapter 9: Transportation System Management.** This chapter summarizes the main themes of Transportation System Management (TSM) programs. The TSM program provides a way for decision-makers to evaluate lower-cost measures against more expensive options when transportation improvements are being considered.

**Chapter 10: Air Quality.** This chapter summarizes the Transportation Control Measures (TCMs) included in the San Joaquin Valley Air Quality Attainment Plan developed as a requirement of the California Clean Air Act.

**Chapter 11: Financial Element.** This chapter provides a summary of estimated revenues considered to be reasonably available to fund the implementation of the RTP.

**Chapter 12: Sustainable Communities Strategy.** This chapter answers the intent of California Senate Bill 375 (SB 375), passed in 2008, to show how the integration of land use and transportation planning can lead to lower emissions of greenhouse gases from autos and light duty trucks. The 2014 RTP-SCS hosts the inaugural presentation of this chapter.

Of these twelve chapters of the RTP-SCS, the Policy Element (Chapter 3) and the Action Element (included in Chapters 4 through 10 and 12) are the two components that include provisions with the potential to create physical changes to the environment. Chapter 10, Air Quality, and Chapter 12, Sustainable Community Strategies, contain measures that serve to reduce vehicle miles traveled, and subsequently reduce vehicle emissions. Consequently, these three elements are described in more detail below:

### **Chapter 3. Policy Element**

The Policy Element seeks to establish a central goal to guide the RTP and to define objectives and policies needed to meet the central goal and to respond to the issues that KCAG must consider. State guidelines require RTPAs and MPOs to develop realistic goals, policies, and objectives to guide state and local planning efforts.

The overall goal of the RTP, described in the Policy Element is to:

*Develop and maintain a multi-modal transportation system which efficiently and safely moves people and goods, and which serves this region's social, economic, and physical needs.*

In addition, the 2014 RTP update includes a range of policies and objectives relating to the following specific transportation issues:



## Program Policy and Objectives

Policy: Continue making full use of KCAG's decision-making forums, including their regular meetings, to examine alternative solutions to transportation needs and problems.

Objectives:

1. Transportation decisions shall be made on the basis of the broadest range of Kings County area public interests.
2. KCAG shall provide clear and firm guidance to the CTC, California Department of Transportation (Caltrans), and local agencies on all transportation matters affecting Kings County.
3. Transportation decisions shall include TSM evaluations.
4. Public safety, retention and maintenance of the existing system, and system efficiency shall be used as criteria in evaluating projects.
5. Total route or system development shall be considered when selecting projects.
6. Funding sources for all transportation modes shall be identified, evaluated and developed. With these, a complete system that is accessible, safe, and efficient shall be built.
7. Public and private transportation facilities shall be planned and developed consistent with overall growth and development policies contained in city and county general plans.

## Environmental Policy and Objectives

Policy: The environmental consequences of transportation project shall be taken into account. Of particular importance are impacts relating to air quality, energy use, noise, and changes in land use.

Objectives:

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



## Public Participation Policy and Objectives

Policy: Transportation facilities and services should meet the needs of all segments of the population. KCAG welcomes community comment and guidance in its transportation planning and decision making process.

Objectives:

1. Continue building an active citizen participation forum.
2. Seek representation from the entire community, including the elderly, poor, and disabled.
3. Hold citizen meetings at convenient times and places.
4. Seek citizen comments early in the planning process, preferably in the problem identification stage of project preparation.
5. Work to create an atmosphere that encourages the expression of all viewpoints, allowing both obvious and latent issues to be brought into the open.
6. Explore alternative methods of obtaining the public's views. Use surveys, make presentations to special interest groups, etc.
7. Keep local media informed of transportation issues and encourage their attendance at public meetings held by KCAG.

## Chapter 4. Regional Highway System Goal, Policy and Objectives

### Highway System Goal, Policy, and Objectives

GOAL: Maintain, upgrade and complete a regional system of roadways which is convenient, safe, and efficient, and which serve the needs of all its users.

Policy: Maintenance shall be continuous to keep the regional highway system from falling further into disrepair. The system shall be upgraded and completed as revenues allow.

Objectives:

1. Maintain and rehabilitate the regional system; reconstruct deteriorated road sections.
2. Provide safety improvements to reduce the number, severity, and probability of accidents.
3. Undertake new construction projects to upgrade and complete the regional system, and to close gaps in local and state highway systems.
4. Implement operational improvements (such as road widening, relief of parking congestion, traffic signals, passing lanes, and turn lanes) to maximize service and efficiency.
5. Carry out landscaping and maintenance projects to help make highways compatible with their surroundings.
6. Enforce local ordinances regulating oversize truck terminal access.



7. Work with Caltrans and local agencies to obtain right-of-way dedications at designated future interchanges within the regional transportation system.
8. Petition the California State Legislature and the CTC to adopt equitable laws and policies for apportioning fuel taxes and funding highway projects. Ensure that Kings County receives its fair share of available transportation dollars.
9. Work more closely with other RTPAs in the area to foster coordinated highway facilities planning.

### Highway Safety Policy and Objectives

Policy: Improve routes of regional significance to promote the safe operation of vehicular traffic, especially during high accident probability times such as times of heavy winter fog, night, etc.

Objectives:

1. Assist night and especially fog driving by providing and maintaining highly reflective "fog" or edge striping, and center divider lines on routes of regional significance.
2. Provide adequate shoulder areas on all state highways and rural regional routes.
3. Install traffic control measures on roads and at intersections when such measures are deemed necessary in accordance with the FHWA Uniform Traffic Control Device Manual.
4. Improve and maintain regional route road surfaces and drainage.
5. Widen or rehabilitate bridges where needed.
6. Provide adequate railroad grade protection devices.
7. Encourage the enforcement of posted speed limits.

### Chapter 5. Goods Movement Policy and Objectives

Policy: Support the efforts of the trucking and rail industries to transport commodities safely and efficiently.

Objectives:

1. Designate and maintain regional and local truck routes to prevent major pavement deterioration on local streets and roads that are not designed for heavy truck traffic.
2. Where needed, widen regional highways to accommodate them to heavy truck traffic.
3. Support enforcement of local truck route ordinances.
4. Develop plans to mitigate congestion on local streets and at intersections where heavy truck traffic occurs.
5. Support efforts to require all trucks carrying hazardous materials to have a manifest, including identification and instructions for handling materials in case of spills. Also support efforts to improve hazardous waste containers so that spillage or leakage does not occur.



6. Support truck weight fees that equitably provide for the highway maintenance costs resulting from heavy trucking.
7. Encourage the improvement of railways through the cooperation and participation with the railroads, with the end purpose of increasing the efficiency of goods movements.
8. Support the installation of automatic grade protection devices at all grade crossings in urban areas.
9. Improve rail grade crossings that impede traffic flows.
10. Encourage the efficient movement of goods through California ports by means of cooperation and participation with the railroads and other San Joaquin Valley MPOs in supporting regional projects.
11. In concert with Caltrans, the California Highway Patrol, and local jurisdictions, restrict roads available for hazardous waste trucking to mitigate potential adverse affects associated with transportation.

## Chapter 6. Public Transportation Policies and Objectives

Public Transit Policy: Provide public transit services for those needs defined as “Unmet Transit Needs” which are “Reasonable to Meet.”

### Objectives:

1. Continue operating the Kings Area Rural Transit and Corcoran Dial-a-Ride systems to provide dependable services for those living in Kings County's urbanized areas that have "unmet transit needs" which can be met at a cost KCAG determines to be reasonable.
2. Provide assistance to social service agencies to improve the efficiency and effectiveness of coordinated transportation services for their clients.
3. Encourage transit operators to minimize transit system operating costs by increasing ridership through the following examples.
  - a. Implement route and schedule modifications.
  - b. Implement equipment and maintenance improvements.
  - c. Implement an aggressive marketing program to improve the image of public transit.
  - d. Follow up on comments of the Social Service Transportation Advisory Council.
4. Follow recommendations of the KCAG 2008 Kings County Transit Development Plan.
5. Assist all eligible claimants, both public and private, in applying for federal transportation grants.
6. Encourage the practice of ridesharing/vanpooling as an alternative to single occupant vehicle commuting.
7. Utilize the Social Services Transportation Advisory Council to identify unmet transit needs of the transit dependent.
8. Promote the coordination of transit with other transportation modes.
9. Encourage and support the enhancement of transit services as a transportation control measure to improve air quality.

10. Support the coordination and consolidation of transit services where appropriate through the development and implementation of the Action Plan and Inventory of Social Service Transportation Providers.

Intercity Rail and Bus Policy: Preserve an effective and convenient intercity public transportation system of regularly scheduled bus and rail services.

Objectives:

1. Monitor and respond to all legislation that could impact bus or rail services in Kings County. Continue the use of KCAG as the forum through which public discussion on bus and rail matters is formalized into public policy recommendations.
2. Work with adjacent RTPA's and Caltrans to unify regional support for keeping and upgrading intercity bus and rail services.
3. Continue Federal and State support of the Amtrak San Joaquin's trains.
4. Support aggressive marketing programs for Amtrak trains and intercity buses.
5. Seek to coordinate local transit services with intercity rail.
6. Support the programming of grade crossing improvements to increase the speeds of intercity rail services.
7. Support state efforts to implement a high speed rail corridor in the San Joaquin Valley.

## Chapter 7. Aviation Goal, Policies and Objectives

GOAL: A fully functional and integrated air transportation and airport system that is complementary to the regional transportation system.

Policy: Work with local agencies to ensure compatible land uses around existing airports to reduce noise conflicts.

Objectives:

1. Support County and local agency land use compatibility plans Kings County's Airport and the local airports in their efforts to ensure compatible land uses around airports.
2. Support the local airports in their attempts to acquire the land surrounding the airports.
3. Support noise abatement procedures around the local airports.

Policy: Maintain alternative modes of transportation to and from the Hanford Municipal Airport and the Corcoran Airport.

Objective:

1. Support local transit service to and from the Hanford Municipal Airport and the Corcoran Airport.



Policy: Promote the development and maximum utilization of public and private airports to provide for county and regional general air transportation needs.

Objectives:

1. See that the existing county wide airport system is maintained and upgraded. Where warranted, use federal, state, local, or private funds to carry out improvements.
2. Ensure that public expenditures for airport development are consistent with demonstrated public demand.
3. Support the retention of scheduled passenger air service at Fresno and Visalia to provide convenient and dependable links to major commercial airports.
4. Airport improvements, in particular at the Naval Air Station Lemoore, shall be protected by coordinated city or county land-use regulations in aviation easements. Such easements should be used to minimize the nuisance effect of airports on their surroundings, and to prevent the encroachment of uses that are incompatible with air operations.
5. Follow the recommendations of the Kings County Airport Land Use Compatibility Plan and the Hanford Municipal Airport Master Plan.
6. Recognize and allow airstrips necessary for servicing agricultural needs.
7. Explore the feasibility of establishing public airports in Avenal and Corcoran.
8. Support increases in aviation capital improvement funds and sources for rural general aviation public use airports.

## Chapter 8. NON-MOTORIZED POLICY AND OBJECTIVES

Policy: Improve the existing transportation system to better accommodate bicycles and pedestrians as well as automobiles and trucks; improve public awareness of and competence in bicycle use; and improve public and private sector responsiveness to bicycle and pedestrian transportation.

Objectives:

1. Provide a well-developed, safe and convenient, intermodally connected system of bikeways complete with support facilities.
2. Ensure that future development supports and facilitates the expansion, improvement, and maintenance of the bikeway system.
3. Provide on-going bicycle safety education and information programs.
4. Implement bikeways that will connect major employers, educational facilities and recreational areas.
5. Encourage partnerships between private, non-profit, governmental and citizens groups to implement bicycle and pedestrian improvements.
6. Fund road maintenance that will also provide better roads for bicycles.
7. Correct roadway surface and hazards on bikeways.
8. Provide theft-resistant parking facilities at high-use destinations.
9. Eliminate physical barriers to bicycle travel.
10. Encourage enforcement of bicycle traffic laws.
11. Keep State Route 198 closed to bicycles to prevent children from playing on the freeway.



However, KCAG staff should investigate the feasibility of issuing permits to touring cyclists to allow temporary access on SR 198.

12. Start public awareness programs to increase acceptance of the bicycle.
13. Integrate bicycle and pedestrian considerations into local planning agendas. Implement complete streets and other multi-modal concepts as outlined by the California Complete Streets Act of 2008 (AB 1358), as well as Caltrans Deputy Directive 64-R1 (DD-64-R1).
14. Encourage the use of bicycle and pedestrian modes of transportation to enhance air quality and improve human health.
15. Implement the projects identified in the "2011 Kings County Regional Bicycle Plan".
16. Utilize the Bicycle Advisory Committee in the prioritization and programming of bicycle improvements.

## Chapter 9. Transportation Systems Management Policies and Objectives

State planning guidelines suggest that TSM objectives be time-specific and quantified. This is to allow year-by-year analysis of progress toward TSM targets. These requirements apply to Transportation Management Agencies (TMA). KCAG is not a TMA and is not required to participate in the Congestion Management Program (CMP). Because of this distinction, the objectives in KCAG's program are not themselves quantified or time-specific. Staff acknowledges that Kings County, although considered a "small urbanized" area based on population, is very rural and its transportation improvements are small in scale compared to those of larger urbanized areas. While Kings County's size does not preclude TSM planning, it does make it hard to set realistic or meaningful target figures. The attainment of TSM objectives can be documented by periodic studies of the effectiveness of TSM measures in future RTPs.

Policy: Maintain and improve the quality of the existing transportation system.

Objectives:

1. Shorten the travel time required to move people and goods on the existing system.
2. Lower travel costs required to move people and goods on the existing system.
3. Increase the safety of the existing system.
4. Improve the personal security of persons using the existing system.
5. Improve the comfort and convenience of the existing system.
6. Enhance the reliability of the existing system.

Policy: Increase the efficiency of the existing transportation system.

Objectives:

1. Seek to reduce dependency upon the automobile for single occupant vehicle commuting by encouraging carpooling.
2. Encourage use of Kings County's transit system.
3. Facilitate pedestrian and bicycle travel.



Policy: Minimize the costs to improve the quality and efficiency of the existing transportation system.

Objectives:

1. Find cost-effective ways to upgrade the existing system.
2. Minimize the operating costs of the existing system.

Policy: Minimize the undesirable environmental impacts of existing transportation facilities and services.

Objectives:

1. Reduce noise and vibration caused by the existing system.
2. Reduce air quality impacts caused by the existing system.
3. Reduce the amount of energy consumed by users of the existing system.

Policy: Promote desirable and minimize undesirable social and economic impacts of the existing transportation system.

Objectives:

1. Provide adequate transportation services to the disadvantaged and transit dependent at a reasonable cost.
2. Provide reasonably priced public transit.
3. Minimize neighborhood impacts caused by transportation improvements.
4. Complement the long-range land-use policies of local general plans.

## Chapter 10. Air Quality

### Kings County TCM Programs

KCAG and each local jurisdiction has under taken TCM programs and projects to implement the SJVAPCD air quality plans at the local level. The following is a summary of those efforts:

- Traffic Flow Improvements
- Public Transit
- Rideshare Programs
- Bicycles
- Alternative Fuels
- Passenger Rail and Support Facilities
- Park and Ride Lots
- Telecommunications
- Alternative Work Schedules

### Valleywide TCM Programs

- Smoking Vehicle Program





- Employer Trip Reduction Programs
- Spare the Air Program

## Chapter 12. Sustainable Communities Strategy

The SCS ultimately consists of the preferred land use and transportation scenario selected by KCAG as best capable of meeting RTP goals which are focused on a preferred growth scenario developed consistent with the Kings County Blueprint Principles adopted in 2008. The principles include the following:

- The cities and the County of Kings will retain local land use authority.
- Direct future growth to existing urbanized areas within Kings County to ensure orderly and sufficient provision of services and infrastructure.
- Concentrate urban growth within the Blueprint Urban Growth Boundaries for cities and Community Service Districts to minimize outward expansion into importation farmlands.
- Preservation of agricultural lands surrounding Cities and Communities shall serve as open space buffers that separate and maintain the individual identities and uniqueness of the Cities and Communities within Kings County.
- Balance the Countywide need for urban growth and economic development with reinforced preservation of the County's prioritized agricultural resources.
- Enhance economic development connectivity through transportation highway infrastructure improvements that focus on expanding State Route 198 and State Route 43 to four lanes through Kings County.
- Improve air quality through enhanced commuter connectivity by implementing alternative transportation modes and enhancing existing modes, and supporting the continuation of Amtrak passenger rail service through Kings County on the existing BNSF alignment.
- Create a range of housing alternatives and minimum and maximum densities that meet the changing needs of Kings County residents.
- Protect the many natural resources and sensitive environmental habitats such as the Kings River corridor and wetlands from urban encroachment.
- Provide for an encroachment free operating environment for Naval Airs Station Lemoore in coordination with the City of Lemoore and the County of Kings.

These Blueprint principles are integrated or in the process of being integrated in the General Plans of all local agencies.

In order to implement a Public Participation Plan and public outreach, KCAG held three public workshops and formed a RTP Stakeholder Working Group, which included various advocacy groups, organizations, and associations. The Working Group produced the following recommended scenarios for the RTP-SCS:

- Business as Usual – No changes from the 2008 SB 375 base year
- Scenario #1 – The RTP-SCS Scenario with 10-15% transit investment
- Scenario #2 – Intensified Transit with 30% investment
- No-build Scenario: All transportation development and construction stops



All local agencies found these recommendations were consistent with their general plan policies. The preferred growth scenario selected by KCAG would include the concentration of investment (in about the 10-15% range) into other than single occupancy vehicles, increases in transit options (stops and frequencies), bicycle and pedestrian facilities, and neighborhood connectivity.

The 2014 RTP-SCS simultaneously addresses the region's transportation needs and encourages increased development densities and improving commercial and residential access to transit services consistent with the land use and zoning designations of the local agencies.

Transportation strategies contained in the 2014 RTP-SCS, including managing transportation demand and making certain 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 the geographic relationships between land uses – including density and intensity – help determine travel demand. Thus, to meet requirements of SB 375, the SCS:

- Identifies future land use patterns consistent with the local agencies' land use plans;
- Identifies areas to accommodate long-term housing needs as well as 8-year housing needs;
- Considers resource areas and farmland;
- Identifies transportation needs and the planned transportation network;
- Set forth a future land use pattern consistent with the local agencies' land use plans to meet GHG emissions reduction targets.

These requirements, as outlined in California Government Code Section 65080(b)(2)(B), do not mean that the SCS creates a mandate for certain land use policies at the local level. In fact, SB 375 specifically states that the SCS cannot dictate local General Plan policies (see Government Code Section 65080(b)(2)(J)). Rather, the SCS is intended to provide a regional policy foundation that local governments may build upon as they choose and generally includes quantitative growth projections. The intent of the proposed RTP-SCS is to be consistent with the local agencies' General Plan land use and zoning designations which have already undergone CEQA environmental review.

### *Action Elements*

The Action Elements within Chapters 4 through 9 of the RTP-SCS delineate the current program of highway, streets and roadway projects. Included are “constrained” projects for which funding is reasonably expected to be available. Improvements included in the RTP have been proposed by the various jurisdictions that comprise KCAG along with Caltrans. Table 2-1 below lists constrained roadway improvements proposed in the 2014 RTP-SCS. The projects that comprise the 2014 RTP-SCS focus on highway, local roadway, active transportation (bicycle and pedestrian), rail, transit and airports.

**Table 2-1  
Financially Constrained – Local Funded Roads**

Jurisdiction	Route	Project Location	Project Description	Estimated Project Cost (\$000s)
City of Avenal	Third Ave.	San Joaquin St - SR 33	Overlay and improve curb cuts/ramps	\$495
City of Avenal	Mariposa St	First to Fifth Ave's	Overlay and improve curb cuts/ramps	\$400
City of Avenal	Fifth Ave.	Mariposa St. to SR 269	Overlay and improve curb cuts/ramps	\$500
City of Corcoran	Whitley Ave.	From Otis to Pickerell Ave.	Streetscape, Traffic Calming and Street Improvements	\$206
City of Corcoran		Various Roadways	Pavement Maintenance Program	\$215
City of Corcoran		Various Roadways	Pavement Maintenance Program	\$222
City of Corcoran		Various Roadways	Pavement Maintenance Program	\$229
City of Corcoran		Various Roadways	Pavement Maintenance Program	\$235
City of Corcoran		Various Roadways	Pavement Maintenance Program	\$241
City of Corcoran		Various Roadways	Pavement Maintenance Program	\$248
City of Corcoran		Various Roadways	Pavement Maintenance Program	\$254
City of Corcoran		Various Roadways	Pavement Maintenance Program	\$261
City of Corcoran		Various Roadways	Pavement Maintenance Program	\$267
City of Corcoran		Various Roadways	Pavement Maintenance Program	\$273
City of Corcoran		Various Roadways	Pavement Maintenance Program	\$280
City of Corcoran		Various Roadways	Pavement Maintenance Program	\$286
City of Corcoran		Various Roadways	Pavement Maintenance Program	\$292
City of Corcoran		Various Roadways	Pavement Maintenance Program	\$298
City of Hanford	W. Lacey Blvd.	Hfd.-Arm to Mall Dr. (Interchange Project)	Widen from 2 to 6 lanes w/ median	\$25,000
City of Hanford	W. Lacey Blvd.	Greenfield Ave. to Mall Dr.	Rehabilitate / Overlay	\$800
City of Hanford	13th Ave.	13th Ave. / Grangeville Blvd.	Traffic Signal	\$600
City of Hanford	6th Street	Between Harris and Brown Sts.	Construct Park-n-Ride Facility	\$425
City of Hanford	Hfd-Arm Rd.	Hfd.- Arm. / Irwin St.	Traffic Signal	\$425
City of Hanford	Houston Ave.	Houston / 11th Ave.	Traffic Signal	\$575
City of Hanford	12th Ave.	Mall Dr. to N. of Lacey	Rehabilitate/ Overlay/ Restripe (4 to 6 lanes)	\$800
City of Hanford	City wide	Various	Bike facility improvements	\$250



**Table 2-1  
Financially Constrained – Local Funded Roads**

Jurisdiction	Route	Project Location	Project Description	Estimated Project Cost (\$000s)
City of Hanford	11th Ave.	Ivy St to Grangeville	Rehabilitate / Overlay	\$800
City of Hanford	11th Ave.	11th / Grangeville Blvd.	Intersection Improvements/Channelization	\$600
City of Hanford	Douty St.	Douty St / Sixth St	Traffic Signal	\$400
City of Hanford	City wide	PW Corp. Yard	Electric charging station	\$500
City of Hanford	12th Ave.	Houston Ave. to Hfd-Arm	Widen from 2 to 4 lanes w/ median	\$2,000
City of Hanford	12th Ave.	12th Ave. / Hume Ave.	Traffic Signal	\$500
City of Hanford	E. Lacey Blvd.	10th Ave. to 9th Ave..	Widen from 2 to 4 lanes w/ left turn pockets	\$2,500
City of Hanford	E. Lacey Blvd.	at 9th Ave.	Install Traffic Signals	\$500
City of Hanford	E. Lacey Blvd.	9th Ave. to Sierra Dr.	Widen from 2 to 4 lanes w/ left turn pockets	\$2,000
City of Hanford	E. Lacey Blvd.	at Sierra Dr.	Install Traffic Signals	\$500
City of Hanford	Grangeville Blvd.	Douty to 10th Ave.	Rehabilitate / Overlay	\$600
City of Hanford	W. Lacey Blvd.	12 1/2 Ave. to 13th Ave.	Widen from 2 to 4 lanes w/ median	\$1,750
City of Hanford	W. Lacey Blvd.	at 12 1/2 Ave	Install Traffic Signals	\$500
City of Hanford	Redington St.	Lacey Blvd. to Grangeville Blvd.	Rehabilitate / Overlay	\$600
City of Hanford	Fargo Ave.	BN&SF to 12th Ave.	Widen from 2 to 4 lanes w/ left turn pockets	\$1,000
City of Hanford	Grangeville Blvd.	12th Ave. to 13th Ave.	Widen from 2 to 4 lanes w/ left turn pockets	\$2,000
City of Hanford	Grangeville Blvd.	12th Ave. to 13th Ave.	Install Traffic Signals & Pedestrian Facilities	\$1,000
City of Hanford	Fargo Ave.	12th Ave. to 13th Ave.	Widen from 2 to 4 lanes w/ left turn pockets	\$2,000
City of Hanford	Fargo Ave.	12th Ave. to 13th Ave.	Install Traffic Signals & Pedestrian Facilities	\$1,000
City of Hanford	Grangeville	11th Ave. to 12th Ave.	Rehabilitate / Overlay	\$1,000
City of Hanford	Hfd.-Arm Rd	12th Ave. 13th Ave.	Widen from 2 to 4 lanes w/ left turn pockets	\$1,500
City of Hanford	Hfd.-Arm Rd	at 12th Ave	Install Traffic Signals	\$500
City of Hanford	12th Ave.	Fargo Ave.to Flint Ave.	Widen from 2 to 4 lanes w/ median	\$2,000



**Table 2-1  
Financially Constrained – Local Funded Roads**

Jurisdiction	Route	Project Location	Project Description	Estimated Project Cost (\$000s)
City of Hanford	12th Ave	Fargo Ave. to Flint Ave.	Install Traffic Signals & Pedestrian Facilities	\$1,000
City of Hanford	10th Ave.	Hwy 198 to Grangeville blvd.	Rehabilitate / Overlay	\$1,000
City of Hanford	Houston Ave.	10th Ave. to 11th Ave.	Widen from 2 to 4 lanes w /median	\$2,000
City of Hanford	Houston Ave.	10th Ave. to 11th Ave.	Install Traffic Signals & Pedestrian Facilities	\$1,000
City of Hanford	10th Ave.	Grangeville to Hwy 43	Rehabilitate / Overlay	\$1,000
City of Hanford	Houston Ave.	11th Ave. to 12th Ave.	Widen from 2 to 4 lanes w/ median	\$2,000
City of Hanford	Houston Ave.	11th Ave. to 12th Ave.	Install Traffic Signals & Pedestrian Facilities	\$1,000
City of Hanford	Grangeville Blvd.	10th Ave to 9 1/4 Ave.	Rehabilitate / Overlay	\$1,000
City of Hanford	Grangeville Blvd.	9 1/4 Ave. to Hwy 43	Widen from 2 to 4 lanes w/ median	\$3,000
City of Hanford	Grangeville Blvd.	9 1/4 Ave. to Hwy 43	Install Traffic Signals & Pedestrian Facilities	\$1,000
City of Hanford	Fargo Ave.	11th Ave. to Meadow View Ln.	Rehabilitate / Overlay	\$1,000
City of Hanford	11th Ave.	Grangeville Blvd. to Fargo Ave.	Rehabilitate / Overlay	\$1,000
City of Hanford	9th Ave.	Lacey Blvd. to Grangeville Blvd.	New arterial roadway -4 lanes w/ median	\$3,000
City of Hanford	9th Ave.	Lacey Blvd. to Grangeville Blvd.	Install Traffic Signals & Pedestrian Facilities	\$1,500
City of Hanford	11th Ave.	Lacey Blvd. to Grangeville Blvd.	Rehabilitate / Overlay	\$1,000
City of Hanford	11th Ave.	Hfd-Arm Rd. to Lacey Blvd.	Rehabilitate / Overlay	\$1,000
City of Hanford	9th Ave.	Grangeville Blvd. to Fargo Ave.	New arterial roadway -4 lanes w/ median	\$3,000
City of Hanford	9th Ave.	Grangeville Blvd. to Fargo Ave.	Install Traffic Signals & Pedestrian Facilities	\$1,500
City of Hanford	11th Ave.	Hfd.- Arm. Rd. to Houston Ave.	Rehabilitate / Overlay	\$1,000
City of Hanford	11th Ave.	Houston Ave. to Idaho Ave.	Widen from 2 to 4 lanes w/ left turn pockets	\$3,000
City of Hanford	11th Ave.	Houston Ave. to Idaho Ave.	Install Traffic Signals & Pedestrian Facilities	\$1,500
City of Hanford	12th Ave.	Hfd-Arm Rd. to Lacey Blvd.	Rehabilitate / Overlay	\$1,000
City of Hanford	12th Ave.	Lacey Blvd. to Grangeville Blvd.	Rehabilitate / Overlay	\$1,000



**Table 2-1  
Financially Constrained – Local Funded Roads**

Jurisdiction	Route	Project Location	Project Description	Estimated Project Cost (\$000s)
City of Hanford	10th Ave.	Hfd. - Arm. Rd. to Houston Ave.	Widen from 2 to 4 lanes w/ left turn pockets	\$2,500
City of Hanford	10th Ave.	Hfd. - Arm. Rd. to Houston Ave.	Install Traffic Signals & Pedestrian Facilities	\$1,000
Kings County	12th Avenue	Liberty St to Grangeville	Plane and Overlay	\$281
Kings County	Hanford Armona Rd	Front Street to Lemoore Canal	Overlay	\$650
Kings County	14 <sup>th</sup> Ave	Lacey to School Street	Overlay	\$314
Kings County	6 <sup>th</sup> Ave	SR 198 To Fargo	Reconstruct 0.5 mile	\$523
Kings County	Grangeville Blvd	R41 to 18th	Overlay	\$379
Kings County	18 <sup>th</sup> Avenue	At Jersey Avenue	Signals and approach work	\$375
Kings County	Houston Ave	1st to SR43	some grind & patch	\$1,307
Kings County	9 ¼ Ave	Grangeville to Lacey	Overlay	\$426
Kings County	Hanford Armona Rd	Elks Meadow to SR41	Overlay	\$285
Kings County	Lacey Blvd	At 13 <sup>th</sup> Avenue	Signals and bridge work	\$500
Kings County	10 ½ Ave	Kansas to Nevada	widen to 28 feet without increasing number of lanes	\$1,308
Kings County	Flint Ave	SR43 to 12th	Overlay	\$425
Kings County	11 th Ave	Houston to Idaho	Overlay	\$392
Kings County	Kansas Ave	4th Avenue to SR43	Overlay	\$994
Kings County	Kansas Ave	14th to 16th	Overlay	\$569
Kings County	14th Ave	School Street to Excelsior	Overlay	\$948
Kings County	Avenal Cutoff Rd	Nevada Ave to I-5	Install right turn and acceleration lanes	\$1,035
Kings County	County Intersections	Various Locations	Install right turn lanes and flashing beacons	\$326
Kings County	10th Ave	Idaho to Kansas	Overlay	\$1,262
Kings County	Houston Ave	10th to 10 1/2)	reconstruction	\$275
Kings County	Grangeville Blvd	12 ½ to 15th	Overlay	\$536
Kings County	18th Ave	SR198 to Iona	Overlay	\$183
Kings County	Jackson Ave	SR43 to 11th)	reconstruct 1.5 miles	\$1,062



**Table 2-1  
Financially Constrained – Local Funded Roads**

Jurisdiction	Route	Project Location	Project Description	Estimated Project Cost (\$000s)
Kings County	Jackson Ave	11th to 14th	reconstruct 1 mile	\$948
Kings County	Jackson Ave	14th to 17th (widen to 28 feet)	Overlay	\$853
Kings County	12th Ave	Hume to Idaho	Overlay	\$523
Kings County	Excelsior Ave	0.25 mile west of 12th to SR 43	Overlay	\$451
Kings County	Excelsior Ave	14 1/2 to Kings River	Overlay	\$432
Kings County	Ward & Hubert Drive, Bernard, Cyril Place	Fargo - 12th to 14th	Overlay	\$327
Kings County	Grangeville Blvd	SR41 to 22nd Avenue	Overlay	\$569
Kings County	Houston Ave	SR43 to 10th Avenue	Overlay	\$303
Kings County	Lacey Blvd	18th to SR41	Overlay	\$345
Kings County	6th Ave	Utica to Racine	reconstruct 1.5 miles	\$1,438
Kings County	Laurel Ave	SR41 to 18th Avenue	Overlay	\$588
Kings County	14th Ave	Houston to Jersey	Overlay	\$850
Kings County	6th Ave	Kern County Line to ½ mile North	Overlay	\$286
Kings County	Utica Ave	20th to 25th	reconstruct 1 mile	\$1,197
Kings County	18th Ave	Iona to Jersey	Install left turn lane	\$1,491
Kings County	Front St	Hanford Armona Road to 14th	Overlay	\$157
Kings County	6th Ave	Fargo to Excelsior	Overlay	\$634
Kings County	Houston Ave	13th to 14th	Overlay	\$183
Kings County	Grangeville Blvd	SR43 to 6th	Reconstruct	\$435
Kings County	Grangeville Blvd	5th to 6th	Overlay	\$493
Kings County	Grangeville Blvd	1st to 2 1/2 Ave	Overlay	\$319
Kings County	Grangeville Blvd	2 1/2 Ave to Highline Canal	reconstruct	\$493
Kings County	Grangeville Blvd	Highline Canal to 5th Avenue	Overlay	\$319
Kings County	18th Ave	Laurel to Kansas	Overlay	\$341
Kings County	10th Ave	Nevada to Pueblo	Overlay	\$850
Kings County	10th Ave	Redding to Seattle	Overlay	\$645



**Table 2-1  
Financially Constrained – Local Funded Roads**

Jurisdiction	Route	Project Location	Project Description	Estimated Project Cost (\$000s)
Kings County	10th Ave	Pueblo to Redding	Overlay	\$850
Kings County	10th Ave	Seattle to Utica	CMAQ Seal Coat	\$654
Kings County	14th Ave	Jersey to Kansas	Overlay	\$445
Kings County	Excelsior Ave	SR 41 to 22nd	Overlay	\$645
Kings County	Excelsior Ave	R43 to 6th	reconstruct 1 mile	\$1,268
Kings County	Laurel Ave	Avenal Cut-off to SR41	Overlay	\$1,177
Kings County	Nevada Ave	Avenal Cut-off to SR41	Overlay	\$1,360
Kings County	Avenal Cut Off	SR 198 to 25th	Overlay	\$588
Kings County	9th Ave	R198 to Houston	Overlay	\$218
Kings County	Utica Ave	11th to 16th	Overlay	\$902
Kings County	6th Ave	Utica to Virginia	Overlay	\$569
Kings County	6th Ave	Virginia to Xavier Ave	Overlay	\$645
Kings County	6th Ave	Kern County Xavier Ave	Overlay	\$739
Kings County	Virginia Ave	4th to 6th	Overlay	\$850
Kings County	Utica Ave	16th to 20th	Overlay	\$807
Kings County	Utica Ave	6th to 11th	Overlay	\$1,125
KCAPTA	13	Hanford/Stratford/Kettleman/Avenal	Add morning route	\$25
KCAPTA	12	Hanford/Corcoran	Add morning route	\$8.75
KCAPTA		County wide	Bus intelligent system	\$800
Lemoore	Smith Street	Magnolia St. to Oleander Dr.	Overlay	\$125
Lemoore	CNG Station	CNG Station	Expansion - Purchase Storage Vessel	\$210
Lemoore	Cinnamon Drive	19th Ave to Hill Dr.	Bicycle/Pedestrian Facilities	\$419
Lemoore	Skaggs and Lemoore Ave	Intersection	Synch Ped Signal	\$190
Lemoore	Bush and 19 1/2 Ave	Intersection	Install Traffic Signal	\$ 350
Lemoore	Bush & Belle Haven	Intersection	Install Traffic Signal	\$300
Lemoore	19th and Cedar	Intersection	Install Traffic Signal	\$350





**Table 2-1  
Financially Constrained – Local Funded Roads**

Jurisdiction	Route	Project Location	Project Description	Estimated Project Cost (\$000s)
Lemoore	Hanford-Armona Rd and Cinnamon	Intersection	Install Traffic Signal	\$ 400
Lemoore	Fox and Cinnamon	Intersection	Install Traffic Signal	\$400
Lemoore	19 <sup>th</sup> Avenue	Bush Street to Cedar Lane	Overlay	\$100
Lemoore	Bush Street	19 ½ Ave. to 19 <sup>th</sup> Ave.	Overlay	\$125
Lemoore	C Street	Olive St to Hill St.	Overlay	\$56
Lemoore	Cedar Lane	19 <sup>th</sup> Ave. to Mallard	Overlay	\$75
Lemoore	Cinnamon Drive	Basil St. to Daphne Lane	Overlay	\$120
Lemoore	Vine Street	Bush St. to SR 198	Overlay	\$106
Lemoore	Hickory Drive	Vine St. to Oakdale Lane	Overlay	\$25
Lemoore	Silverado Drive	19 <sup>th</sup> Ave. to Marin Dr.	Overlay	\$60
Lemoore	Olive Ave.	B St. to Redwood Ln.	Overlay	\$65
Lemoore	Oakdale Lane	Vine St. to Lum Ave.	Overlay	\$60
Lemoore	E Street	Fox St. to D St.	Overlay	\$ 60
Lemoore	W. Deodar Lane	Spruce Ave to Glendale Ave.	Overlay	\$100
Lemoore	S. Byron Ave	Bush St to South End	Overlay	\$45
Lemoore	Cambridge Drive	Bush St. to Olive St.	Overlay	\$ 75
Lemoore	E. D Street	Lemoore Ave to Smith St.	Overlay	\$50
Lemoore	W. Burlwood Lane	Lemoore Ave. to Juniper Lane	Overlay	\$90
Lemoore	Bush Street	Lemoore Ave. to D St.	Overlay	\$165
Lemoore	W. D Street	Bush St. to Olive St.	Overlay	\$200
Lemoore	Hanford Armona Road	Lemoore Ave to Liberty Dr.	Overlay	\$200
Lemoore	Hanford Armona Road	Liberty Drive to 19 <sup>th</sup> Ave.	Overlay	\$175
Lemoore	Hanford Armona Road	19 <sup>th</sup> Ave to SR 41	Overlay	\$200
Lemoore	Iona Ave.	Vine St. to 19 <sup>th</sup> Ave	Overlay	\$200
Lemoore	Lemoore Ave	SR 198 to Bush St.	Overlay	\$200
Lemoore	Lemoore Ave.	UPRR to Cinnamon Drive	Overlay	\$175



## 2.5 PROJECT APPROVALS

Approval of the 2014 RTP-SCS is at the discretion of KCAG. Additional environmental review will be conducted by project sponsors, as the lead agency for the individual projects contained within the 2014 RTP-SCS, prior to project implementation.

Depending on the location of the project, future approvals for individual transportation projects identified in the 2014 RTP-SCS would have to be completed by one or more of the following agencies:

- Kings County Association of Governments
- California Department of Transportation (Caltrans)
- California Public Utilities Commission's Rail Crossings Engineering Section (RCES)
- Cities of Avenal, Corcoran, Hanford, and Lemoore
- County of Kings

The relationship of this EIR to future environmental review of individual transportation projects is further discussed in Section 1.0, *Introduction*.

## 2.6 RELATIONSHIP WITH OTHER PLANS AND PROGRAMS

The 2014 RTP-SCS provides a sound basis for the allocation of state and federal transportation funds for transportation projects over the subsequent 26-years. The 2014 RTP-SCS follows guidelines established by the State of California Transportation Commission to:

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

The 2014 RTP-SCS has been evaluated for consistency with the goals, policies and objectives currently being implemented by municipal and county planning agencies within the county.

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## 3.0 ENVIRONMENTAL SETTING

### 3.1 PHYSICAL SETTING

#### 3.1.1 Geography

The study area includes all of King County's 1,391 square miles. Located in the southern half of California's San Joaquin Valley, Kings County is bounded by Fresno County to the north and west; Kern County to the south; Tulare County to the east; and Monterey County and San Luis Obispo County to the southwest. There are four incorporated cities within the boundaries of Kings County, including Avenal, Corcoran, Hanford, and Lemoore. Several unincorporated communities (Armona, Home Garden, Kettleman City, and Stratford) are also located within the County, as well as Naval Air Station Lemoore, and the Santa Rosa Rancheria.

Kings County is one of eight counties that comprise the San Joaquin Valley and is bounded on the west by the Coast Ranges; the Sierra Nevada Mountain range to the east; the Tehachapi's to the south; and the Sacramento Valley to the north. Elevations range from 175 feet in the Tulare Lake Basin to 3,473 feet at the extreme southwestern portion of the County in the Coast Ranges.

The Kings River runs along the northern edges and flows south towards the center of the County. Historically, this river flowed farther south to what was once the Tulare Lake. However, water diversion and levies have since controlled flooding and dried the lake up. Now this area is extensively used for agricultural crop production, and is referred to as the Tulare Lake Basin.

#### 3.1.2 Regional Transportation System

Kings County contains approximately 945 miles of county roads, 386 miles of city streets, 130 miles of State Highways and 27 miles of Interstate. There are two public use airports and approximately 67 miles of rail lines in the county, including the Amtrak "San Joaquins" corridor. The County's major highway system encompasses Interstate 5, and several State Routes, including 33, 41, 43, 137, 198 and 269. Examples of some of the major arterials in Kings County include Avenal Cutoff Road, Excelsior Avenue, Flint Avenue, Grangeville Bypass, Grangeville Boulevard, Lacey Boulevard, Houston Avenue, Jackson Avenue, Kansas Avenue, Laurel Avenue, Whitley Avenue, Nevada Avenue, Pueblo Avenue, Utica Avenue, 6th Avenue, 10th Avenue, 10 ½ Avenue, 12th Avenue, 12 ¾ Avenue, 14th Avenue, 18th Avenue and 22<sup>nd</sup> Avenue. Additionally, the highway system includes numerous county maintained local roads, as well as local streets and highways within each of the four cities and four unincorporated communities.

State highways play an important role in Kings County's transportation system. Highway traffic in Kings County is generally composed of farm-to-market, commuter and business trips. Local roads are utilized extensively for the movement of farm-to-market products. With increased urbanization taking place in the county, an increasing percentage of commuter, and business trips are developing. In addition, there is an increase in demand of pedestrian, bicycle and transit facilities to support alternative modes of transportation.



## 3.2 DEMOGRAPHIC SETTING

### 3.2.1 Population

The estimated 2013 total population of Kings County is 151,127 (California Department of Finance, 2014). This represents about a two percent decrease from the last RTP update in 2011 when the population was 154,743. The four incorporated cities within Kings County contain approximately 78% of the total County population. The remainder of the County's population (33,442) is primarily located within the four unincorporated communities of Armona, Home Garden, Kettleman City, and Stratford (California Department of Finance, 2013). These population estimates include the federal territory populations of Naval Air Station Lemoore and the Santa Rosa Rancheria, as well as the inmate populations at Avenal and Corcoran State Prisons.

### 3.2.2 Economic Setting

The San Joaquin Valley supports extensive farmland practices. Kings County's farm land area is level irrigated farmland that averages well over \$1 billion per year in commercial crop production. Kings County has historically been and continues to be a large agriculture producing area. Over 90% of the County is designated for agricultural uses.

Naval Air Station Lemoore has a working population of over 6,500 active duty military members and 2,000 civilian employees. Kings County's civilian labor force is approximately 60,000, with an annual average unemployment rate of 14.7% in March of 2014 (California Employment Development Department, 2014). Historically, agriculture and government have dominated Kings County's economy. In 2012 Kings County ranked 8th in California by value of agriculture production (California County Agricultural Commissioners, 2012). The primary industries include government, agriculture, manufacturing, and trade, transportation, and utilities. Government is the largest industry in the county, accounting for 33.8% of the employment whereas agriculture accounts for 13.5%. Trade, transportation, and utilities represent 13.7% and educational and health services reflects 13.9% (California Employment Development Department, 2014).

Kings County is a low-income county due to the large farm worker population and lack of large industries. Per capita personal income in Kings County in 2011 is \$29,407, which is consistently lower than the State average of \$43,647. California's overall per capita income only increased 0.6% between 2007 and 2011 in the midst of the recession; however, Kings County's per capita income saw an increase of 25.6% in the same time period (California Employment Development Department, Labor Market Information, Accessed April 24<sup>th</sup>, 2014).

## 3.3 CUMULATIVE PROJECTS SETTING

### 3.3.1 CEQA Requirements

According to the *State CEQA Guidelines* Section 15130(a)(1), "a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the environmental impact report (EIR) together with other projects causing related impacts." In



addition, an EIR must discuss cumulative impacts if the incremental effect of a project, combined with the effects of other projects is “cumulatively considerable” [Section 15130(a)]. Such incremental effects are to be “viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects” [Section 15164(b)(1)]. Together, these projects comprise the cumulative scenario which forms the basis of the cumulative impact analysis. A cumulative impact analysis should highlight past actions that are closely related (either in time or location) to the project being considered, catalogue past projects, and discuss how past projects have harmed the environment, and discuss past actions, even if they were undertaken by another agency or another person.

Both the severity of impacts and the likelihood of their occurrence are to be reflected in the discussion, “but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion of cumulative impacts shall be guided by standards of practicality and reasonableness, and shall focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact” [Section 15130(b)]. However, the analysis must be in sufficient detail to be useful to decision makers in deciding whether, or how, to alter the program to lessen cumulative impacts.

As discussed in Section 1.4 of this EIR, Section 15130 of the State CEQA Guidelines prescribes two methods for analyzing cumulative impacts: (1) use of a list of past, present, and reasonably anticipated future projects producing related or cumulative impacts; or (2) use of a summary of projections contained in an adopted general plan or related planning document. However, this document is a Program EIR that analyzes the effects of cumulative buildout of the 2014 RTP-SCS. The proposed 2014 RTP-SCS considers the past, present, and future projects described in method 1 above and proposes a range of ~~specific land use and~~ transportation projects designed to meet the plan goals and current and projected future transportation infrastructure needs. The project also constitutes the cumulative scenario described in method 2. Therefore, the cumulative effects of all circulation system improvements in the region are included in the analysis of the proposed project’s impacts. The analysis of project impacts contained in this “first tier” environmental review document will form the basis for the cumulative analysis contained in any subsequent environmental documentation for specific projects proposed under the 2014 RTP-SCS.

### **3.3.2 Kings County Buildout**

Buildout of the Kings County General Plan as well as the general plans adopted by each of the four incorporated cities within Kings County, represent buildout of the 2014 RTP-SCS planning area. The projects identified in Section 2.0, Project Description, provide the framework for build out within the county and the cumulative impact analysis approach discussed above.

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## 4.0 ENVIRONMENTAL IMPACT ANALYSIS

This section discusses the possible environmental effects of the proposed project for the specific issue areas that were identified as having the potential to experience significant impacts.

“Significant effect” is defined by the *State CEQA Guidelines* §15382 as “a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment, but may be considered in determining whether the physical change is significant.”

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

*Class I. Significant and Unavoidable: An impact that cannot be reduced to below the threshold level given reasonably available and feasible mitigation measures. Such an impact requires a Statement of Overriding Considerations to be issued if the project is approved per §15093 of the State CEQA Guidelines.*

*Class II. Significant: An impact that can be reduced to below the threshold level given reasonably available and feasible mitigation measures. Such an impact requires findings to be made under §15091 of the State CEQA Guidelines.*

*Class III. Not Significant: An impact that may be adverse, but does not exceed the threshold levels and does not require mitigation measures. However, mitigation measures that could further lessen the environmental effect may be suggested if readily available and easily achievable.*

*Class IV. Beneficial: An effect that would reduce existing environmental problems or hazards.*

Following each environmental effect discussion is a listing of recommended mitigation measures (if required) and the residual effects or level of significance remaining after the implementation of the measures. Each section concludes with a screening-level discussion of specific 2014 RTP-SCS transportation projects that may result in identified impacts.





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## 4.1 AESTHETICS

### 4.1.1 Setting

**a. Visual Character of the County.** The visual character within Kings County is characterized by a mix of rural and built environments. The rural environment predominantly consists of natural or agricultural countryside. The built environment is focused in the communities of Armona, Home Garden, Kettleman City, and Stratford, as well as the incorporated cities of Avenal, Corcoran, Hanford, and Lemoore, which have been shaped by the settlement patterns of residents, businesses, and institutions. Specific attributes of the rural and built environments are discussed in greater detail below.

Rural Environment. King County is located in the south-central portion of the San Joaquin Valley. Typical views throughout the valley consist of long-range vistas of the surrounding mountains and foothills, open grazing lands, orchards, vineyards, and agricultural fields. The visual character of the region is rural in nature, characterized by such uses as grazing, open space, and cultivated agriculture, which is the dominant land use due to the valley's fertile alluvial soils and compatible climate. Interspersed among the agricultural fields are natural features such as rivers, hills, and other open spaces, as well as manmade features including urban and rural communities and parks.

Kings County's most prominent natural feature is the Kings River, which forms part of the County's northern border. Other local scenic resources include the Coast Ranges, with the unique formations of the Chalk Buttes-Reef Ridge portion of the Kreyenhagen Hills; the Pyramid Hills; Cottonwood Pass; Sunflower Valley; and Cross Creek. The foothill and mountain terrain of the County's southwest edges also provide a distinctive visual backdrop of higher elevations. With the vast majority of the county existing along the San Joaquin Valley floor, the Kettleman Hills are the first elevated foothills that greet travelers along the western edge of the County.

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

Built Environment. Urban development within the ~~unincorporated~~ County consists of unincorporated urban growth is focused in four communities, which include Armona, Home Garden, Kettleman City, and Stratford, ~~while as well as four incorporated city growth is within the four cities of~~ ies, which include Avenal, Corcoran, Hanford, and Lemoore. ~~These~~ The unincorporated communities maintain small rural town atmospheres. Armona, Home Garden, and Stratford serve as bedroom communities to the nearby cities of Hanford and Lemoore. The urban character within these communities is defined by residential uses, developed and



undeveloped parkland, school and government facilities, various commercial services, and industrial uses.

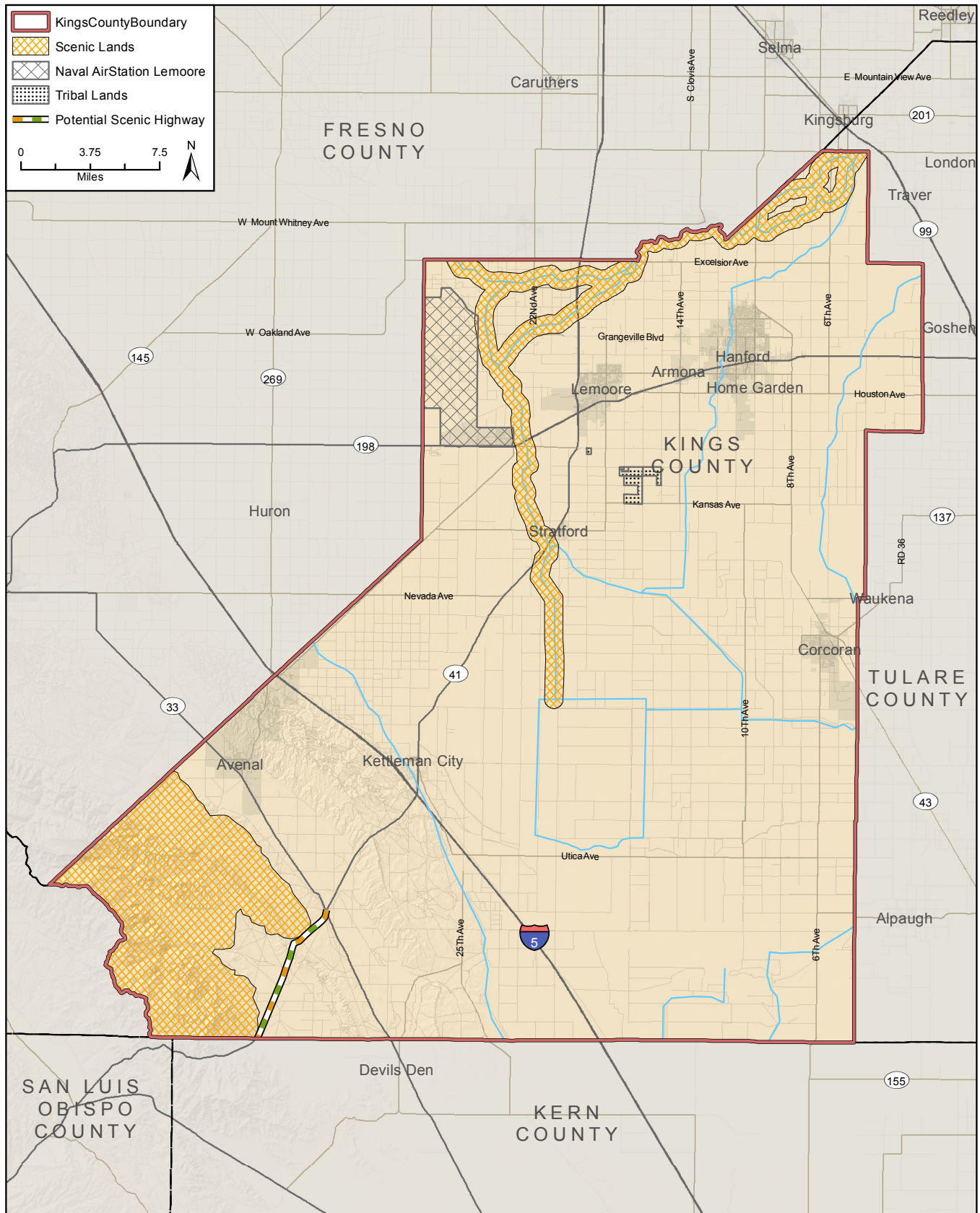
While residential uses range from very low (one unit per acre) to very high density (24+ units per acre), the majority of housing development falls within low to medium densities. Parkland primarily consists of small developed parks with such amenities as benches, playgrounds, and turfed areas. Public designated land typically accommodates school facilities or government buildings for civic uses.

Commercial uses include neighborhood commercial, rural commercial, service commercial, and transportation commercial, which provide the opportunity for the various types of retail stores, offices, service establishments, and wholesale businesses to concentrate for the convenience of the public. Examples of such uses include restaurants, retail shops, markets, and convenience stores, which are typically located and grouped on sites so they are in logical proximity to the respective geographical areas and respective categories of patrons that they serve. Industrial uses include both light industrial and heavy industrial, which accommodate assembly and manufacturing operations of all kinds, including small items, food products, and agricultural-related products.

**b. Primary Viewing Corridors.** Principal travel corridors are important to an analysis of aesthetic features because they define the vantage point for the largest number of viewers. As of 2014, the California Department of Transportation (Caltrans) has not officially designated any routes within the County as scenic highways. However, the Caltrans Scenic Highways Map shows a portion of State Route 41, from State Route 33 to the Kern County line, as eligible for designation as a scenic highway (Caltrans, 2011). The 2035 Kings County General Plan designates this roadway as a scenic corridor within the County and plans to coordinate with KCAG to secure its designation as an official State Scenic Highway through the Caltrans Transportation Enhancement program.

Scenic resources, as designated by the County, primarily include the Coast Ranges to the southwest, with formations of the Chalk Buttes-Reef Ridge portion of the Kreyenhagen Hills, the Pyramid Hills, Cottonwood Pass, and Sunflower Valley. Other scenic resources include the various ridgelines located west of the County in adjacent Fresno County, which are visible along State Route 41 from the northern county line to Kettleman City. State Route 41 improvements were constructed from February 2007 to the fall of 2008, which moved and raised the road alignment above the existing floodplain (Kings County, 2010). With an elevated roadway surface, this highway now provides travelers with greater views across Sunflower Valley. Refer to Figure 4.1-1 for a map of scenic lands and highways as designated by the County.

The County's Open Space Element also considers oak trees to be valued visual resources. Valley oak trees exist in small clusters or intermittently near the Kings River channel. These naturally occurring oaks add to the visual character and distinction of the river corridor along the northern edges of the County. These oak trees primarily exist on private land that is predominantly used for agricultural production.



Data background elements provided by ESRI and its licensors © 2014.  
County of Kings and Natural Resource Conservation Service, 2007.

Scenic Lands and Potential Scenic  
Highways in Kings County

Figure 4.1-1

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

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

**d. Regulatory Setting.** The general plans and zoning ordinances of the cities within the County regulate design and the built environment within those communities.

Kings County 2035 General Plan. The Kings County 2035 General Plan, as adopted in January 2010, provides the main regulatory framework for addressing aesthetic issues in the County.

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

The following goals, objectives, and policies from the Open Space Element pertain to aesthetics impacts from the 2014 RTP-SCS:

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

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

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



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

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

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

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

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

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

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

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

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

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

Kings County Zoning Ordinance. The Kings County Zoning Ordinance implements the General Plan by establishing setback, parking and sign standards, building height limits, and building densities. Article 21 of the Zoning Ordinance includes the guidelines for site plan review, which allows the zoning administrator to make a finding that a proposed development is in conformity with the intent and provisions of the ordinance and as a guide for the issuance of building permits. Plan review is also intended to protect the public welfare by ensuring that there will be no adverse effects of a project on surrounding property. It applies to any use listed within a particular zoning district as a permitted use subject to site plan review. It includes considerations relative to neighborhood compatibility, setbacks, building height, location of service, landscaping, fences and walls, views and obstructions, signs, and lighting. Specifically, plan review ensures that proposed lighting is so arranged as to reflect the light away from



adjoining properties. Development review is also a part of the conditional use permit and planned unit development process.

City General Plans and Zoning Ordinances. The general plans and zoning ordinances of the cities within the County regulate design and the built environment within those cities. The city general plans and zoning typically prescribe visual resource policies, and in some cases, require development review of projects. In general, little direction is provided regarding the design of roadways, which are typically subject to adopted Caltrans or local engineering standards related to safety and capacity, rather than aesthetics.

#### 4.1.2 Impact Analysis

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

The CEQA Guidelines (Appendix G) identifies the following criteria for determining whether a project's impacts would have a significant impact on the environment. Significant impacts may result if a project would:

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

**b. Project Impacts and Mitigation Measures.** This section describes generalized impacts associated with proposed transportation improvements ~~and the future land use scenario envisioned under the 2014 RTP-SCS.~~ Table 4.1-1 in Section 4.1.2.c. summarizes the specific projects that could result in aesthetic impacts.

**Impact AES-1 Proposed transportation improvements under the 2014 RTP-SCS, ~~as well as the land use patterns envisioned by the 2014 RTP-SCS,~~ would not affect public views along eligible or designated scenic corridors, or other scenic routes considered to have high scenic qualities. This would be a Class III, less than significant impact.**

Neither construction nor operation of the transportation improvements proposed in the 2014 RTP-SCS would affect eligible or designated scenic corridors, or other roadways with scenic qualities. As discussed in Section 4.1.1, *Setting*, the segment of Highway 41 from State Route 33



to the Kern County line is the only roadway recognized for its scenic character in Kings County, and no transportation improvements are proposed for this segment.

~~Furthermore, the preferred growth scenario envisioned by the 2014 RTP-SCS would encourage compact development in urban centers and would increase investment in bicycle and pedestrian facilities. This scenario would facilitate growth in already developed areas, rather than in the vicinity of the rural, scenic segment of Highway 41. Therefore, the proposed 2014 RTP-SCS would have a less than significant impact on scenic corridors.~~

Mitigation Measures. None required.

Significance After Mitigation. Impacts would be less than significant without mitigation.

**Impact AES-2 Development of proposed transportation improvement projects under the 2014 RTP-SCS, as well as the land use patterns envisioned by the 2014 RTP-SCS would contribute to the alteration of Kings County's character from primarily rural (or semi-rural) to a somewhat more suburban condition. This would be a Class I, significant and unavoidable impact.**

Some of the proposed transportation improvements would introduce visual features that would alter the existing rural or semi-rural character of the area in which they are proposed. As listed in Table 4.1.1, new road extensions at the outskirts of the City of Hanford would intrude into agricultural lands that offer scenic value. These extensions include the segments of 9<sup>th</sup> Avenue from Lacey Boulevard to Grangeville Boulevard and from Grangeville Boulevard to Fargo Avenue. However, the more numerous proposed road widenings would have the primary impact on aesthetics, by changing the character of a number of rural country roads to that of a more suburbanized community.

Typical impacts of road widenings would include the modification or removal of existing vegetation, the introduction of more massive road structures, and introduction of visual features that would alter the existing rural or semi-rural character of the area in which they are proposed. Such projects would degrade the existing visual condition of the area in which they are proposed. Ancillary facilities constructed along new or existing roads (such as lighting, bus shelters, and signs) would further contribute to the trend toward a more suburban visual character. Specific widening projects with particularly high potential to alter the rural character of the County include, but are not limited to, West Lacey Boulevard, Grangeville Boulevard, and 11<sup>th</sup> Avenue in the greater Hanford area. A complete listing of projects with potential to alter the rural character of the county is included in Table 4.1-1.

It should be noted that the majority of the projects included in the 2014 RTP-SCS would occur in developed areas or adjacent to urban environments. ~~In addition, the land use scenario envisioned by the 2014 RTP-SCS is intended to encourage compact development and development near existing transportation corridors. This type of development would help to avoid impacts to the rural character by concentrating development within existing urbanized areas when compared to a future scenario without the 2014 RTP-SCS. However, when compared to existing conditions, this land use scenario would intensify the built environment within existing urban areas through the implementation of infill and development near existing~~





~~transportation corridors, thereby resulting in an overall change in the character of existing urbanized areas to a more dense development pattern.~~ Additionally, increased vehicle trips and transit activities within these urban areas would generate additional noise, which may create the needs for sound walls or barriers. Such noise mitigation features could result in aesthetic impacts.

As discussed in Section 4.1.1(d), *Regulatory Setting*, the Kings County General Plan contains a number of goals, objectives, and policies to regulate the design of transportation infrastructure projects throughout the County. Each of the incorporated cities has similar goals and policies intended to regulate design of transportation infrastructure within each respective jurisdiction. Nonetheless, the overall visual effect of planned roadway projects ~~and envisioned land use patterns~~ would contribute to an incremental but irreversible transformation in visual character from rural to more urban or suburban. This would be a significant impact.

Mitigation Measures. KCAG shall implement and sponsor agencies can and should implement the following mitigation measures for transportation projects identified in Table 4.1-1. These measures can and should also be implemented for all transportation projects developed pursuant to the 2014 RTP-SCS that would alter the County's rural character.

- AES-2(a)** Roadway extensions and widenings shall avoid the removal of existing mature trees to the extent possible. The loss of trees that are protected by local agencies shall be replaced at a minimum 2:1 basis and incorporated into the landscaping design for the roadway. The project sponsor of a particular 2014 RTP-SCS transportation project shall ensure the continued vitality of replaced trees through periodic maintenance (see mitigation measures prescribed in Section 4.3 *Biological Resources*, Impact B-1).
  
- AES-2(b)** Roadway lighting shall be minimized to the extent possible, and shall not exceed the minimum height requirements of the local jurisdiction in which the project is proposed. This may be accomplished through the use of hoods, low intensity lighting, and using as few lights as necessary to achieve the goals of the project.
  
- AES-2(c)** The project sponsor shall ensure that landscaping is installed to restore natural features along corridors after widening, interchange modifications, realignment, or construction of ancillary facilities. Associated landscape materials and design shall enhance landform variation, provide erosion control, and blend with the natural setting. To ensure compliance with approved landscape plans, the implementing agency shall provide a performance security equal to the value of the landscaping/irrigation installation.



**AES-2(d)** ~~Potential noise impacts arising from increased traffic volumes associated with adjacent land development shall be preferentially mitigated through the use of setbacks and the acoustical design of adjacent proposed structures.~~ Where use of sound walls is found to be necessary to reduce potential noise impacts arising from increased traffic volumes, walls shall incorporate offsets, accents, and landscaping to prevent monotony. In addition, sound walls should be complementary in color and texture to surrounding natural features.

**AES-2(e)** Where a particular 2014 RTP-SCS transportation improvement project affects adjacent landforms, the project sponsor shall ensure that recontouring provides a smooth and gradual transition between modified landforms and existing grade.

Significance After Mitigation. Implementation of the above mitigation measures would reduce project-specific impacts to the extent feasible. Nevertheless, the incremental alteration of the area’s current rural or semi-rural character to a more suburban environment is considered a significant and unavoidable (Class I) impact.

**c. Specific 2014 RTP-SCS Projects That May Result in Impacts.** Table 4.1-1 identifies those projects that may create impacts as discussed in Section 4.1.2.b above. The individual projects listed could create significant aesthetic impacts but would not necessarily do so. Additional specific analysis will need to be conducted as the individual projects are implemented in order to determine the actual magnitude of impact. Mitigation measures discussed above could apply to these specific projects.

**Table 4.1-1  
2014 RTP-SCS Projects That May Result in Aesthetic Impacts**

<b>Jurisdiction</b>	<b>Project Description</b>	<b>Impact</b>	<b>Description of Potential Impact</b>
Hanford	W. Lacey Boulevard - Widen from 2 to 6 lanes from Hanford-Arm to Mall Dr.	AES-2	Alteration of rural character
Hanford	12 <sup>th</sup> Avenue - Widen from Houston Ave. to Hanford-Arm.	AES-2	Alteration of rural character
Hanford	W. Lacey Boulevard - Widen from 12 1/2 Ave. to 13 <sup>th</sup> Ave.	AES-2	Alteration of rural character
Hanford	Fargo Avenue - Widen from BN&SF to 12 <sup>th</sup> Ave.	AES-2	Alteration of rural character
Hanford	Grangeville Boulevard - Widen from 12 <sup>th</sup> Ave. to 13 <sup>th</sup> Ave.	AES-2	Alteration of rural character
Hanford	Fargo Avenue - Widen from 12 <sup>th</sup> Ave. to 13 <sup>th</sup> Ave.	AES-2	Alteration of rural character
Hanford	Hanford-Armona Road - Widen from 12 <sup>th</sup> Ave. to 13 <sup>th</sup> Ave.	AES-2	Alteration of rural character
Hanford	12 <sup>th</sup> Avenue - Widen from Fargo Ave. to Flint Ave.	AES-2	Alteration of rural character
Hanford	Houston Avenue - Widen from 11 <sup>th</sup> Ave. to 12 <sup>th</sup> Ave.	AES-2	Alteration of rural character
Hanford	Grangeville Boulevard - Widen from 9 ¼ Ave. to Hwy 43	AES-2	Alteration of rural character



**Table 4.1-1  
 2014 RTP-SCS Projects That May Result in Aesthetic Impacts**

<b>Jurisdiction</b>	<b>Project Description</b>	<b>Impact</b>	<b>Description of Potential Impact</b>
Hanford	9 <sup>th</sup> Avenue - Construct new arterial roadway from Lacey Blvd. to Grangeville Blvd.	AES-2	Alteration of rural character
Hanford	9 <sup>th</sup> Avenue - Construct new arterial roadway from Grangeville Blvd. to Fargo Ave.	AES-2	Alteration of rural character
Hanford	11 <sup>th</sup> Avenue - Widen from Houston Ave. to Idaho Ave.	AES-2	Alteration of rural character
Kings County	10 ½ Avenue - Widen from Kansas Ave. to Nevada Ave.	AES-2	Alteration of rural character
Kings County	18 <sup>th</sup> Avenue - Install left turn lane from Iona to Jersey	AES-2	Alteration of rural character
Kings County	Avenal Cutoff Road - Install right turn and acceleration lanes from Nevada Ave. to I-5	AES-2	Alteration of rural character



## 4.2 AIR QUALITY

This section analyzes the impacts of the 2014 RTP-SCS upon local and regional air quality. Both temporary impacts relating to construction activity and long-term impacts associated with population growth and associated growth in vehicle traffic and energy consumption are discussed.

### 4.2.1 Setting

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

Kings County is part of the San Joaquin Valley Air Basin (SJVAB), which is defined by the Sierra Nevada to the east, the Coast Ranges to the west, and the Tehachapi mountains to the south. The SJVAB includes eight counties in California's Central Valley: San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, Tulare, and western Kern County. The surrounding topographic features restrict air movement through and out of the basin and, as a result, the SJVAB is highly susceptible to pollutant accumulation over time. Inversion layers are formed in the SJVAB throughout the summer and winter; an inversion layer is created when a mass of warm dry air sits over cooler air near the ground, preventing vertical dispersion of pollutants from the air mass below. During the summer, the San Joaquin Valley experiences daytime temperature inversions at elevations from 2,000 to 2,500 feet above the valley floor, during the winter months, inversions occur from 500 to 1,000 feet above the valley floor.

Warm, dry summers and cooler winters characterize the San Joaquin Valley floor. Summer high temperatures in Kings County often exceed 100° F (degrees Fahrenheit), averaging in the upper 90s. During the summer, wind usually originates from the north end of the San Joaquin Valley and blows in a southeasterly direction. During winter months, the average temperature in the County is in the low 50s. Wind blows from the south end of the San Joaquin Valley toward the north. Low wind speeds and low inversion layers during the winter result in high carbon monoxide and particulate matter concentrations.

**b. Pollutants.** Primary criteria pollutants are emitted directly from a source (e.g., vehicle tailpipe, an exhaust stack of a factory, etc.) into the atmosphere. Primary criteria pollutants include carbon monoxide (CO), reactive organic compounds (ROC), nitric oxide (NO), fine particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>), sulfur dioxide (SO<sub>2</sub>), and lead (Pb). Secondary criteria pollutants are created by atmospheric chemical and photochemical reactions; reactive organic compounds (ROC) together with nitrogen oxides form the building blocks for the creation of photochemical (secondary) pollutants. Secondary pollutants include oxidants, ozone (O<sub>3</sub>) and sulfate and nitrate particulates (smog). The characteristics, sources and effects of critical air contaminants are provided in Table 4.2-1 on the following page.

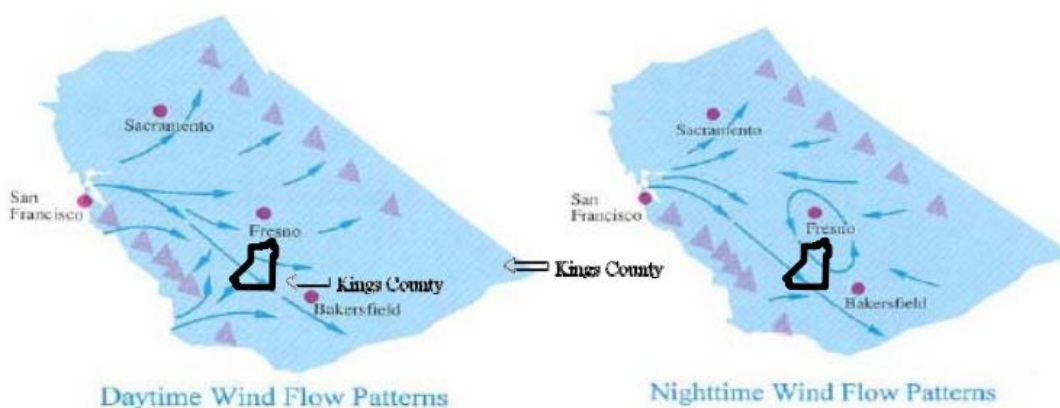
Air quality in the San Joaquin Valley ranks among the worst in the country for ozone and particulate matter, exposing the residents of Kings County to unacceptable levels of air



pollution. Air quality impacts are regional problems in the case of ozone and secondary fine particulate matter that are formed in chemical and photochemical reactions in the atmosphere. These pollutants are often formed in locations distant from where the pollutant precursors are emitted. Air quality impacts can also be localized in the case of directly emitted particulate matter, carbon monoxide, hazardous air contaminants and odors. Localized pollutants disperse and decrease in concentration with distance from the source (Kings County, 2010).

Kings County generates its own pollutant emissions but is also impacted by transport of pollutants from areas of the Valley and the Bay Area that are upwind of Kings County, and pollutants recirculated around the Valley during periods of stagnation. Figure 4.2-1 displays the generalized air flows during the summer and winter in the San Joaquin Valley. Although the Bay Area is classified as an area that transports pollutants to the San Joaquin Valley Air Basin, air quality research studies indicate that pollution generated in the Bay Area is a minor component of the local problem and San Joaquin Valley Air Basin generates sufficient pollution to exceed air quality standards (Kings County, 2010).

**Figure 4.2-1 Generalized Wind Flows in the San Joaquin Valley**



Source: Kings County General Plan (2010), SJVAPCD 2007 Ozone Plan (2007)

**c. Federal/State/Local Regulatory Framework.** Air Quality regulations in Kings County are subject to both Federal and State standards. The 1990 Clean Air Act mandated that the federal Environmental Protection Agency (EPA) manage and control air quality by establishing the National Ambient Air Quality Standards (NAAQS). In California, the task of air quality management and regulation has been legislatively granted to the California Air Resources Board. The California Air Resources Board is responsible for research activities, the establishment of California Ambient Air Quality Standards (CAAQS) guidelines for air quality management, and the regulation of both stationary and mobile emission sources (i.e., motor vehicles). The CAAQS are generally more stringent than corresponding Federal standards. Table 4.2-2 illustrates both the Federal and State current pollutant regulations.

The California Air Resources Board established fourteen air basins and delegated local pollution control authority to Air Pollution Control Districts (APCD). For Kings County, located within the San Joaquin Valley Air Basin, air pollution control authority is vested with the San Joaquin Valley Air Pollution Control District (SJVAPCD).

**Table 4.2-1  
Description Of Selected Air Contaminants**

<p><b>PHOTOCHEMICAL OXIDANT (Ox)</b></p> <p>Characteristics- The term “photochemical oxidant” can include several different pollutants, but consists primarily of ozone (more than 90 percent) and a group of chemicals called organic peroxy nitrates. Photochemical oxidants are created in the atmosphere rather than emitted directly into the air. Reactive organic gases and oxides of nitrogen are the emitted contaminants which participate in the reaction. Ozone is a pungent, colorless toxic gas which is produced by the photochemical process. Photochemical oxidant is a characteristic of southern California type smog, and reaches highest concentrations during the summer and early fall.</p> <p>Sources - Ozone is caused by complex atmospheric reactions involving oxides of nitrogen and reactive organic gases with ultraviolet energy from sunlight. Motor vehicles are the major source of oxides of nitrogen and reactive organic gases in the basin.</p> <p>Effects - The common manifestations of ozone and other photochemical oxidants are damage to vegetation and cracking of untreated rubber. Ozone in high concentrations (ranging from 0.15 ppm to 0.50 ppm) can also directly affect the lungs, causing respiratory and coronary irritation and possible changes in lung functions. These health problems are particularly acute in children and elderly people exposed to these pollutants.</p>
<p><b>CARBON MONOXIDE (CO)</b></p> <p>Characteristics - CO is a colorless, odorless, toxic gas produced through the incomplete combustion of fossil fuels. Concentrations are higher in winter when more fuel is burned for heating purposes and weather conditions favor the build-up of directly emitted contaminants.</p> <p>Sources -The use of gasoline powered engines is the major source of this contaminant, with the automobiles being the primary contributor. CO emissions from gasoline powered engines are higher during winter months due to poor engine efficiency in cold temperatures. Various industrial processes also produce CO emissions through incomplete combustion of fossil fuels.</p> <p>Effects - CO does not irritate the respiratory tract, however, it passes through the lungs directly into the blood stream and, by interfering with the transfer of oxygen, deprives sensitive tissues of oxygen.</p>
<p><b>NITROGEN OXIDES (NOx)</b></p> <p>Characteristics - It primarily consists of nitric oxides (NO) (a colorless, odorless gas formed from atmospheric nitrogen and oxygen when petroleum combustion takes place under high temperatures and/or pressure) and nitrogen dioxide (NO<sub>2</sub>) (a reddish-brown irritating gas formed by the combination of nitric oxide with oxygen).</p> <p>Sources - High combustion temperatures cause nitrogen and oxygen to combine and form nitric oxide. Further reaction produces additional oxides of nitrogen. Combustion in motor vehicle engines, power plants, refineries and other industrial operations are the primary sources in the region. Ships, railroads and aircraft are other significant emitters.</p> <p>Effects - Oxides of nitrogen are direct participants in photochemical smog reactions. The emitted compound, nitric oxide, combines with oxygen in the atmosphere in the presence of sunlight, to form nitrogen dioxide and ozone. Nitrogen dioxide, the most significant of these pollutants, can color the atmosphere at concentrations as low as 0.5 ppm on days of 21 0-mile visibility. NO<sub>2</sub> is an important air pollutant in the region because it is a primary receptor of ultraviolet light. The latter initiates photochemical reactions, helping to form ozone and/or particulate nitrate. It will also react in the air to form nitrate particulates.</p>



**Table 4.2-1  
 Description Of Selected Air Contaminants**

<p><b>SULFUR DIOXIDE (SO<sub>2</sub>)</b></p> <p>Characteristics - SO<sub>2</sub> is a colorless, pungent, irritating gas formed primarily by the combustion of sulfur-containing fossil fuels. In humid atmospheres, SO<sub>2</sub> can form sulfur trioxide and sulfuric acid mist, with some of the latter eventually reacting to produce sulfate particulates.</p> <p>Sources -This contaminant is the natural combustion product of sulfur or sulfur-containing fuels. Fuel combustion is the major source, while chemical plants, sulfur recovery plants, and metal processing are minor contributors.</p> <p>Effects - At sufficiently high concentrations, sulfur dioxide irritates the upper respiratory tract. At lower concentrations, when in conjunction with particulates, SO<sub>2</sub> appears able to do still greater harm by injuring lung tissues. Sulfur oxides, in combination with moisture and oxygen, can yellow the leaves of plants, dissolve marble and eat away iron and steel. Sulfur oxides can also react to form sulfates which reduce visibility.</p>
<p><b>PARTICULATES (Total Suspended Particles and PM<sub>10</sub>)</b></p> <p>Characteristics - Atmospheric particulates are made up of finely divided solids or liquids such as soot, dust, aerosols, fumes and mists. About 90 percent by weight of the emitted particles are larger than 10 microns in diameter, but about 10 percent by weight, or 90 percent of the total <i>number</i> of particulates are less than 5 microns in diameter. The aerosols formed in the atmosphere, primarily sulfate and nitrate, are usually smaller than 1 micron. In areas close to major sources, particulate concentrations are generally higher in the winter, when more fuel is burned for heating, and meteorological conditions favor the build-up of directly-emitted contaminants. However, in areas remote from major sources and subject to photochemical smog (ozones), particulate concentrations can be higher during summer months because the presence of ozone increases the potential for SO<sub>2</sub> and NO<sub>2</sub> to convert to sulfate and nitrate particulates.</p> <p>Sources - Particulate matter consists of particles in the atmosphere resulting from many kinds of dust and fume-producing industrial and agricultural operations, from combustion, and from atmospheric photochemical reactions. Re-entrained road dust from vehicles is a significant source of particulates. Natural activities also put particulates into the atmosphere; wind-raised dust and ocean spray are two such sources of particulates.</p> <p>Effects - In the respiratory tract very small particles of certain substances may produce injury by themselves, or may contain absorbed gases that are injurious. Suspended in the air, particulates less than 5 microns in diameter can both scatter and absorb sunlight, producing haze and reducing visibility. They can also cause a wide range of damage to materials.</p>
<p><b>DIESEL PARTICULATE MATTER (DPM)</b></p> <p>Characteristics - Diesel particulate matter is part of a complex mixture that makes up diesel exhaust. Diesel exhaust is commonly found throughout the environment. Diesel exhaust is composed of two phases, either gas or particle and both phases contribute to the 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 also has many different types of particles that can be classified by size or composition. The size of diesel particulates that are of greatest health concern are those that are in the categories of fine, and ultra fine particles. The composition of these fine and ultra fine particles maybe composed of elemental carbon with adsorbed compounds such as organic compounds, sulfate, nitrate, metals and other trace elements.</p> <p>Sources - 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.</p>



**Table 4.2-1  
Description Of Selected Air Contaminants**

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 in experimental animal inhalation studies have shown a range of dose dependent lung inflammation and cellular changes in the lung and there are also diesel exhaust immunological effects. Based upon human and laboratory studies, there is considerable evidence that diesel exhaust is a likely carcinogen. Human epidemiological studies demonstrate an association between diesel exhaust exposure and increased lung cancer rates in occupational settings.

**HYDROCARBONS AND OTHER ORGANIC GASES (Total Hydrocarbons, CH<sub>4</sub> NMHC (non-methane), AHC, NHC)**

Characteristics - Any of the vast family of compounds consisting of hydrogen and carbon in various combinations are known as hydrocarbons. Fossil fuels are included in this group. Many hydrocarbon compounds are major air pollutants, and those which can be classified as olefins or aromatics are highly photochemically reactive. Atmospheric hydrocarbon concentrations are generally higher in winter because the reactive hydrocarbons react more slowly in the winter and meteorological conditions are more favorable to their accumulating in the atmosphere to higher concentration before producing photochemical oxidants.

Sources - Motor vehicles are a major source of anthropogenic hydrocarbons (AHC) in the basin. Other sources include evaporation of organic solvents and petroleum refining and marketing operations. Trees are the principal emitters of biogenic or natural hydrocarbons (NHC).

Effects - Certain hydrocarbons can damage plants by inhibiting growth and causing flowers and leaves to fall. Levels of hydrocarbons currently measured in urban areas are not known to cause adverse effects in humans. However, certain members of this contaminant group are important components in the reactions which produce photochemical oxidants.





**Table 4.2-2  
Current Federal and State Ambient Air Quality Standards**

Pollutant	Federal Standard	California Standard
Ozone	0.075 ppm (8-hr avg)	0.09 ppm (1-hr avg) 0.07 ppm (8-hr avg)
Carbon Monoxide	35.0 ppm (1-hr avg) 9.0 ppm (8-hr avg)	20.0 ppm (1-hr avg) 9.0 ppm (8-hr avg)
Nitrogen Dioxide	0.10 ppm (1-hr avg) 0.053 ppm (annual avg)	0.18 ppm (1-hr avg) 0.030 ppm (annual avg)
Sulfur Dioxide	0.075 ppm (1-hr avg) 0.14 ppm (24-hr avg)	0.25 ppm (1-hr avg) 0.04 ppm (24-hr avg)
Lead	1.5 µg/m <sup>3</sup> (calendar quarter)	0.15 µg/m <sup>3</sup> (3-month avg)
Particulate Matter (PM <sub>10</sub> )	150 µg/m <sup>3</sup> (24-hr avg)	50 µg/m <sup>3</sup> (24-hr avg) 20 µg/m <sup>3</sup> (annual avg)
Particulate Matter (PM <sub>2.5</sub> )	35 µg/m <sup>3</sup> (24-hr avg) 12 µg/m <sup>3</sup> (annual avg)	12 µg/m <sup>3</sup> (annual avg)

ppm= parts per million

µg/m<sup>3</sup> = micrograms per cubic meter

Source: California Air Resources Board, [www.arb.ca.gov/research/aaqs/aaqs2.pdf](http://www.arb.ca.gov/research/aaqs/aaqs2.pdf), June 4, 2013

**Emission Regulations.** Mobile emission sources are regulated through the establishment of Federal and State vehicle emission requirements with which auto manufacturers must comply. Motor vehicle emissions are also regulated by the State’s vehicle inspection and maintenance program (the “Smog Check Program”). Indirectly, increases in motor vehicle emissions can be regulated by agencies other than ARB through CEQA and determinations of consistency with the Clean Air Plan (CAP) and other City and County General Plans. SJVAPCD’s *Guide for Assessing and Mitigating Air Quality Impacts* (January 2002 revision) establishes SJVAPCD thresholds of significance for air pollutants, which are described in Section 4.2.2(a), Methodology and Significance Thresholds, below.

*SJVAPCD Regulation VIII.* The purpose of Regulation VIII (Fugitive PM<sub>10</sub> Prohibitions) is to reduce ambient concentrations of fine particulate matter (PM<sub>10</sub>) by requiring actions to prevent, reduce or mitigate anthropogenic fugitive dust emissions. Regulation VIII identifies general requirements (Rule 8011), as well as those for construction, demolition excavation, extraction, and other earthmoving activities (Rule 8021), bulk materials (Rule 8031), carryout and trackout (Rule 8041), open areas (Rule 8051), paved and unpaved roads (Rule 8061), unpaved vehicle/equipment traffic areas (Rule 8071), and agricultural sources (Rule 8081). Rule 8011 General Requirements are as follows:

- Materials used for chemical/organic stabilization of soils, including petroleum resins, asphaltic emulsions, acrylics, and adhesives shall not violate State Water Quality Control Board standards for use as a soil stabilizer. Materials accepted by the California Air Resources Board (ARB) and the United States Environmental Agency (EPA), and which meet State water quality standards, shall be considered acceptable to the APCO.
- Any material prohibited for use as dust suppressant by EPA, the ARB, or other applicable law, rule, or regulation is also prohibited under Regulation VIII.
- Use of hygroscopic materials may be prohibited by the APCO in areas lacking sufficient atmospheric moisture of soil for such materials to effectively reduce fugitive dust



emissions. The atmospheric moisture of soil is considered to be sufficient if it meets the application specifications of the hygroscopic product manufacturer. Use of such materials may be approved in conjunction with sufficient wetting of the controlled area.

- Any use of dust suppressants or gravel pads, and paving materials such as asphalt or concrete for paving, shall comply with other applicable District Rules.

**d. Current Air Quality.** Monitoring of ambient air pollutant concentrations is conducted by the ARB, SJVAPCD and industry. Monitors operated by the ARB and SJVAPCD are part of the State and Local Air Monitoring System (SLAMS). The SLAMS stations are located to provide local and regional air quality information. Monitors operated by industry, at the direction of the SJVAPCD, are called Prevention of Significant Deterioration (PSD) stations. PSD stations are required by the SJVAPCD to ensure that new and modified sources under SJVAPCD permit do not interfere with the County’s ability to attain or maintain air quality standards. There are two monitoring stations located within Kings County. CARB operates a station at South Irvine Street in Hanford and at Patterson Avenue in Corcoran.

The SJVAPCD is required to monitor air pollutant levels to assure that the air quality standards are met and, in the event they are not, to develop strategies to meet these standards. Depending on whether the standards are met or exceeded, the local air basin is classified as being in “attainment” or “non-attainment.” The County is currently classified as being a non-attainment area for the federal and state ozone standards, the federal and state PM<sub>2.5</sub> standards, and the state PM<sub>10</sub> standards. Basin-wide historical data on the number of PM<sub>2.5</sub> and ozone exceedances is provided in Figures 4.2-2 through 4.2-4.

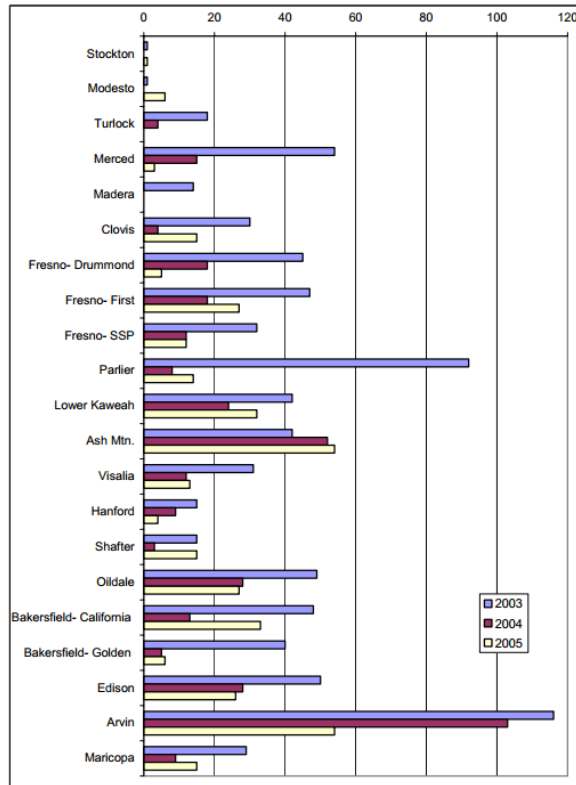
**Figure 4.2-2  
 San Joaquin Valley Air Basin Annual Average NOx Emissions and  
 NOx Target for PM<sub>2.5</sub> Attainment**



*Note: The “NOx Target” line represents the basin-wide average NOx goal, the NOx emissions level at which the entire Valley will be in attainment of the annual PM<sub>2.5</sub> standard. Though modeling shows that NOx is the dominant pollutant for reducing the San Joaquin Valley’s PM<sub>2.5</sub> concentrations, direct PM<sub>2.5</sub> reductions and SO<sub>2</sub> reductions also provide necessary and measurable benefits to ambient PM<sub>2.5</sub> levels.  
 Source: SJVAPCD, 2008PM<sub>2.5</sub> Plan, April 2008*

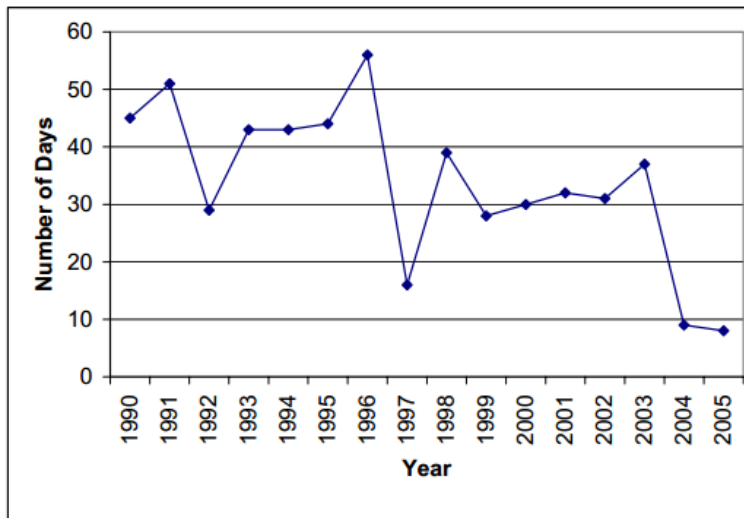


**Figure 4.2-3**  
**San Joaquin Valley Air Basin Days Over the Level of the Federal 8-hour Ozone Standard**



Source: SJVAPCD, 2007 Ozone Plan, April 2007

**Figure 4.2-4**  
**San Joaquin Valley Air Basin Basin-Days Over the 1-hour Ozone Standard**



Source: SJVAPCD, 2007 Ozone Plan, April, 2007



**e. Air Quality Management.** The Federal Clean Air Act Amendments (FCAAA) of 1990 set a schedule for the attainment of the NAAQS. States are required to prepare a State Implementation Plan (SIP) to develop strategies to bring about attainment of the standards. In addition, the California Clean Air Act of 1988 requires areas that exceed the California ambient air quality standards to plan for the eventual attainment of the State standards. The SJVAPCD details the District’s progress towards attainment in its Annual Reports to the Community and also in its Air Quality Plans. The most recent Air Quality Plans for which the County is classified as being a non-attainment area are the 2007 8-Hour Ozone Plan, Fast Track Action Plan, 2007 PM<sub>10</sub> Maintenance Plan, and the 2008 PM<sub>2.5</sub> Plan. SJVAPCD developed a 2012 PM<sub>2.5</sub> Plan and a new plan for EPA’s revoked 1-hour ozone standard which was presented to the District Governing Board in September, 2013, however, these plans have not been adopted by the EPA. The next plan for EPA’s 8-hour ozone standard is the plan to address EPA’s 2008 8-hour ozone standard of 75 parts per billion (ppb), which is expected to be due to EPA in 2015. Tables 4.2-3, 4.2-4, and 4.2-5 below show the emissions inventory and forecast for NO<sub>x</sub>, ROG, PM<sub>2.5</sub>, and PM<sub>10</sub> within the San Joaquin Valley Air Basin. Although SO<sub>x</sub>, can be a contributor to PM<sub>2.5</sub> emissions, the EPA has approved the APCD’s finding that on-road vehicles are an insignificant contributor to PM<sub>2.5</sub> precursor, SO<sub>x</sub>, and ROG emissions levels in the San Joaquin Valley and that controls on them would be ineffective at reducing PM<sub>2.5</sub> (SJVAPCD, 2012). As a result, the San Joaquin Valley MPOs are not required to measure SO<sub>x</sub> and therefore, SO<sub>x</sub> emissions are not discussed as part of this analysis.

**Table 4.2-3  
 San Joaquin Valley Air Basin Emissions Inventory  
 and Forecasts for NO<sub>x</sub> and ROG**

<b>Emission Source</b>	<b>2005 (Tons/Day)</b>	<b>2020 (Tons/Day)</b>	<b>2023 (Tons/Day)</b>
On-Road Mobile Diesel NO <sub>x</sub> <sup>1</sup> Summer Average	256.6	109.0	92.6
Total On-Road Mobile NO <sub>x</sub> Summer Average	336.5	140.1	120.1
On-Road Mobile Diesel ROG Summer Average	16.9	9.1	7.9
Total On-Road ROG Summer Average	101.7	45.7	41.9

<sup>1</sup> On-Road Mobile Diesel emissions include emissions from the following vehicle classes: LHDV1, LHDV2, MHDV, HHDV, and UB.  
 Source: SJVAPCD, 2007 Ozone Plan, April 2007

**Table 4.2-4  
 San Joaquin Valley Air Basin Emissions Inventory  
 and Forecasts for PM<sub>2.5</sub>**

<b>Emission Source</b>	<b>2005 (Tons/Day)</b>	<b>2014 (Tons/Day)</b>
On-Road Mobile Diesel PM <sub>2.5</sub> <sup>1</sup> Annual Average	9.8	6.2
Total On-Road Mobile PM <sub>2.5</sub> Annual Average	12.1	8.9

<sup>1</sup> On-Road Mobile Diesel emissions include emissions from the following vehicle classes: LHDV1, LHDV2, MHDV, HHDV, and UB.  
 Source: SJVAPCD, 2008 PM<sub>2.5</sub> Plan, April 2008



**Table 4.2-5  
San Joaquin Valley Air Basin Emissions Inventory  
and Forecasts for PM<sub>10</sub>**

<b>Emission Source</b>	<b>2005 (Tons/Day)</b>	<b>2020 (Tons/Day)</b>
On-Road Mobile Diesel PM <sub>10</sub> <sup>1</sup> Annual Average	11.2	4.7
Total On-Road Mobile PM <sub>10</sub> Annual Average	14.9	9.8

<sup>1</sup> On-Road Mobile Diesel emissions include emissions from the following vehicle classes: LHDV1, LHDV2, MHDV, HHDV, and UB.

Source: SJVAPCD, 2007 PM<sub>10</sub> Maintenance Plan, September 2007

## 4.2.2 Impact Analysis

**a. Methodology and Significance Thresholds.** This analysis follows the guidance and methodologies recommended in the SJVAPCD's 2002 *Guide for Assessing and Mitigating Air Quality Impacts* (GAMAQI) and the CEQA Appendix G thresholds.

Pursuant to the State CEQA Guidelines, air quality impacts related to the proposed project would be significant if the project would:

- *Conflict with or obstruct implementation of the applicable air quality plan;*
- *Violate any air quality standard or contribute substantially to an existing or projected air quality violation;*
- *Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative guidelines for ozone precursors);*
- *Expose sensitive receptors to substantial pollutant concentrations; and/or*
- *Create objectionable odors affecting a substantial number of people*

The SJVAPCD's GAMAQI includes significance criteria for evaluating operational-phase emissions from direct and indirect sources associated with a project. Indirect sources include motor vehicle traffic resulting from the project and do not include stationary sources covered under permit with the SJVAPCD. For this analysis, the project would be considered to have a significant effect on the environment if it would exceed the following thresholds:

- *Cause a net increase in pollutant emissions of reactive organic gases (ROG) or NOx exceeding 10 tons per year*
- *Cause a violation of state CO concentration standards. The level of significance of CO emissions from mobile sources is determined by modeling the ambient concentration under project conditions and comparing the resultant 1- and 8-hour concentrations to the respective state CO standards of 20.0 and 9.0 parts per million.*
- *Expose the public to a probability of contracting cancer for the Maximally Exposed Individual over 10 in one million*
- *Result in a Hazard Index greater than 1 for the MEI for ground-level concentrations of non-carcinogenic toxic air contaminants.*



Although the SJVAPCD GAMAQI recognizes that PM<sub>10</sub> is a major air quality issue in the basin, it does not establish quantitative thresholds for potential impact significance. However, for the purposes of this analysis, a PM<sub>10</sub> emission of 15 tons per year from project operations is used as a significance threshold. 15 tons per year is the SJVAPCD threshold level at which new stationary sources requiring SJVAPCD permits must provide emissions offsets. This threshold of significance for PM<sub>10</sub> is consistent with the establishment of the ROG and NO<sub>x</sub> thresholds of 10 tons per year, which are also offset thresholds established in SJVAPCD Rule 2201.

Short-Term Emissions Methodology. For construction impacts, the pollutant of greatest concern to the District is PM<sub>10</sub>. The SJVAPCD's approach to CEQA analyses of construction PM<sub>10</sub> impacts is to require implementation of effective and comprehensive control measures rather than to require detailed quantification of emissions. PM<sub>10</sub> 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 PM<sub>10</sub> emissions are considered by the SJVAPCD to be sufficient to render a project's construction-related impacts less-than-significant. The SJVAPCD GAMAQI contains a list of feasible control measures for construction-related PM<sub>10</sub> emissions.

Long-Term Emissions Methodology. The methodology for determining the significance of air quality impacts compares existing conditions to the 2014 RTP-SCS conditions in the year 2040, as required in CEQA Section 15126.2(a). The analysis of air quality also includes a comparison between the expected future conditions with the proposed plan and the expected future conditions if no plan were adopted ('No Project' Alternative). With respect to long term impacts, because the 2014 RTP-SCS itself does not directly generate the emissions, SJVAPCD thresholds associated with "new" or Indirect Source Review do not apply in this case. However, state and federal clean air laws require that emissions of pollutants for which national or state ambient air quality standards are violated be reduced from current levels. Therefore, the project's long term impact to air quality is 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 EMFAC2011 emissions factors and multiplied by VMT. VMT, vehicle trips, and VMT by speed class distributions were extracted from the KCAG Model Improvement Program (MIP) Travel Demand Model for the 2040 target year based on the preferred and alternative transportation/~~land use~~ scenarios. 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 KCAG transportation network for the year 2040 under the 2014 RTP-SCS were compared with State Implementation Plan (SIP) emissions budgets and with future conditions under the No Build Scenario in 2040. If countywide ROG or NO<sub>x</sub> emissions associated with the RTP-SCS do not significantly exceed the SIP budgets, impacts to long-term air quality are not considered significant.

**b. Project Impacts and Mitigation Measures.** Implementation of the RTP-SCS 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 RTP-SCS as well as future development facilitated by the SCS land use scenario. Long term emissions would be generated indirectly by the on-road vehicles which would utilize the capital improvements and land uses proposed.

**Impact AQ-1** ~~Construction activities associated with transportation projects under the 2014 RTP-SCS, as well as the land use patterns envisioned by the 2014 RTP-SCS would have the potential to result in temporary adverse impacts on air quality in Kings County the region. Impacts would be Class II, significant but mitigable.~~

There are three primary sources of short term emissions which would be generated by construction of future transportation projects under the 2014 RTP-SCS, as well as future development envisioned by the 2014 RTP-SCS land use scenario. These sources include: operation of the construction vehicles, (i.e., scrapers, loaders, dump trucks); the creation of fugitive dust during clearing and grading; and the use of asphalt or other oil based substances during the final construction phases. The significance of daily emissions, particularly ROC and NOx emissions, generated by construction equipment utilized to build RTP-SCS transportation improvements and future development would depend on the quantity of equipment used and the hours of operation. The significance of fugitive dust (PM<sub>2.5</sub> and PM<sub>10</sub>) emissions would depend upon the following factors: 1) the aerial extent of disturbed soils; 2) the length of disturbance time; 3) whether existing structures are demolished; 4) whether excavation is involved (including the potential removal of underground storage tanks); and, 5) whether transport of excavated materials offsite is necessary. The amount of ROC emissions generated by oil-based substances such as asphalt is dependent upon the type and amount of asphalt utilized. Asbestos can also be of concern during demolition activity associated with construction, however, the demolition, renovation, or removal of asbestos-containing materials is subject to the limitations of the National Emissions Standards for Hazardous Air Pollutants (NESHAP) regulations as listed in the Code of Federal Regulations requiring notification and inspection. According to the SJVAPCD's GAMAQI, strict compliance with existing asbestos regulations will normally prevent asbestos from being considered a significant adverse impact (SJVAPCD, 2002).

Intersection improvements such as signalization, re-striping or signal coordination are not expected to generate significant short term emissions impacts. However, other RTP-SCS projects as well as future development under the RTP-SCS may involve grading and paving, or the construction of permanent facilities. The precise quantity of emissions would need to be determined at the time of proposed construction of a given transportation improvement or development project. Although any individual improvement or development project may not generate significant short-term emissions, it is probable that several projects would be under construction simultaneously, generating cumulative construction emissions which could impact air quality. However, as recommended by SJVAPCD, compliance with Regulation VIII and implementation of mitigation measures for individual projects would reduce resulting impacts. Impacts would be Class II, significant but mitigable.



Mitigation Measures. The following mitigation measures are recommended by KCAG to reduce, minimize or avoid significant adverse environmental impacts. Sponsor agencies can and should implement the following mitigation measures for applicable transportation projects that result in air quality impacts. Project-specific environmental impacts may require these mitigation measures be revised or expanded in response to site-specific conditions.

- AQ-1(a)** The project sponsor shall ensure that SJVAPCD Regulation VIII control measures (listed in Table 6-2 of the GAMAQI) are implemented. The measures shall be noted on all construction plans and the project sponsor shall perform periodic site inspections. SJVAPCD Regulation VIII control measures include the following:
- All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover or vegetative ground cover.
  - All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.
  - All land clearing, grubbing, scraping, excavation, land leveling, grading, cut & fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking.
  - With the demolition of buildings up to six stories in height, all exterior surfaces of the building shall be wetted during demolition.
  - When materials are transported off-site, all material shall be covered, or effectively wetted to limit visible dust emissions, and at least six inches of freeboard space from the top of the container shall be maintained.
  - All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. (The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions.) (Use of blower devices is expressly forbidden.)
  - Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.
  - Within urban areas, trackout shall be immediately removed when it extends 50 or more feet from the site and at the end of each workday.
  - Any site with 150 or more vehicle trips per day shall prevent carryout and trackout.





- AQ-1(b)** The project sponsor shall ensure that SJVAPCD enhanced control measures (listed in Table 6-3 of the GAMAQI) are implemented. The measures shall be noted on all construction plans and the project sponsor shall perform periodic site inspections. SJVAPCD enhanced control measures include the following:
- Limit traffic speeds on unpaved roads to 15 mph.
  - Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.
- AQ-1(c)** The project sponsor shall ensure that SJVAPCD additional control measures (listed in Table 6-3 of the GAMAQI) are implemented. The measures shall be noted on all construction plans and the project sponsor shall perform periodic site inspections. SJVAPCD additional control measures include the following:
- Install wheel washers for all exiting trucks, or wash off all trucks and equipment leaving the site.
  - Install wind breaks at windward side(s) of construction areas.
  - Suspend excavation and grading activity when winds exceed 20 mph.
  - Limit area subject to excavation, grading, and other construction activity at any one time
- AQ-1(d)** The project sponsor shall incorporate the following SJVAPCD heavy duty construction equipment mitigation measures (listed in Table 6-4 of the GAMAQI) to the maximum extent feasible:
- Use alternative fueled or catalyst equipped diesel construction equipment.
  - Minimize idling time.
  - Limit the hours of operation of heavy duty equipment and/or the amount of equipment in use.
  - Replace fossil-fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set).
  - Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing of construction activity during the peak-hour of vehicular traffic on adjacent roadways.
  - Implement activity management (e.g. rescheduling activities to reduce short-term impacts).

Significance after Mitigation. With the implementation of the above mitigation, impacts related to short-term construction emissions would be less than significant.



**Impact AQ-2 Implementation of the 2014 RTP-SCS would not result in an increase of on-road vehicle emissions when compared to the existing conditions established by applicable air quality plans and the future ‘no build scenario.’ Therefore, long-term operational impacts would be Class III, less than significant.**

Projected on-road vehicle emissions on the KCAG transportation network for the year 2040 under the 2014 RTP-SCS were compared to existing conditions as defined by the 2007 Ozone Plan baseline, 2008 PM<sub>2.5</sub> Plan baseline, and the 2007 PM<sub>10</sub> Maintenance Plan baseline. Projected on-road vehicle emissions on the KCAG transportation network for the year 2040 under the 2014 RTP-SCS were also compared with those projected under the ‘no build scenario’, a scenario that accounts for future growth, but in which the transportation improvements identified in the 2014 RTP-SCS are not implemented.

The on-road vehicle source emissions estimates for the 2014 RTP-SCS were produced with the EPA approved EMFAC2011 emission inventory model developed by the California Air Resources Board for use in California. Table 4.2-6 shows the results of the long-term emissions analysis based on annual VMT which were computed for each scenario using the KCAG Travel Demand Model.

**Table 4.2-6  
Regional Emissions Analysis**

Scenario	Analysis Year	PM <sub>2.5</sub> (tons/day)	PM <sub>10</sub> (tons/day)	NOx (tons/day)	ROG (tons/day)	CO (tons/day) <sup>1</sup>
2040 No Build Scenario	2040	0.2	2.2	3.7	1.1	8.37
2040 Preferred Scenario (with 2014 RTP-SCS)	2040	0.2	2.2	3.7	1.1	8.36

<sup>1</sup> Note: Kings County does not have CO conformity budgets and is not in the CO non-attainment portion of the San Joaquin Valley. CO emissions are analyzed herein to demonstrate compliance with SJVAPCD’s GAMAQI.

Source: The on-road mobile source criteria pollutant emissions estimates for the 2014 RTP-SCS were calculated using CARB’s EMFAC2011 emission inventory model.

As previously noted, Kings County is currently classified as being a non-attainment area for the federal and state ozone standards, the federal and state PM<sub>2.5</sub> standards, and the state PM<sub>10</sub> standards. As shown in Table 4.2-6, the RTP-SCS does not result in an increase in PM<sub>2.5</sub>, PM<sub>10</sub>, NOx, ROG, and CO over the ‘no build scenario’ in 2040.

Since the Notice of Preparation baseline year (2013) is not a conformity year for criteria pollutants, these emissions cannot be calculated for the year 2013 in a manner consistent with conformity. Therefore, a comparison between 2013 criteria pollutant emissions and future year criteria pollutant emissions would not be valid. As such, for the purpose of this analysis, criteria pollutant emissions associated with the RTP-SCS for NOx, ROG, PM<sub>2.5</sub>, and PM<sub>10</sub> were compared with SIP budget levels. For PM<sub>2.5</sub>, the 2008 PM<sub>2.5</sub> SIP identifies a baseline emissions estimate of 2002 from which all emissions sources must be reduced and a 2014 PM<sub>2.5</sub> conformity budget of 0.3 tons/day. Projected PM<sub>2.5</sub> emissions with the RTP-SCS for the year 2040 are 0.2 tons/day, which is below the 2014 SIP budget. For PM<sub>10</sub>, the 2007 PM<sub>10</sub> SIP identifies a baseline emissions estimate from which all emissions sources must be reduced for transportation conformity of 2002 and a 2020 PM<sub>10</sub> conformity budget of 3.6 tons/day. Projected PM<sub>10</sub> emissions with the RTP-SCS for the year 2040 are 2.2 tons/day, which is below the 2020 SIP



budget. For the (1997) 8-hour Ozone standard, the 2007 Ozone standard SIP identifies a baseline emissions estimate of 2002 from which all emissions sources must be reduced and 2014, 2017, 2020, and 2023 ROG and NO<sub>x</sub> conformity budgets. Projected ROG and NO<sub>x</sub> emissions with the RTP-SCS for the year 2040 are 1.1 tons/day and 3.7 tons/day respectively, which are below the 2014, 2017, 2020, and 2023 SIP budgets. A SIP for the 2006 8-Hour Ozone standard has not been developed. However, in the San Joaquin Valley, the EPA requires MPOs to use the 2007 Ozone plan budgets for the 1997 Ozone standard. As mentioned in Table 4.2-6 above, Kings County does not have CO conformity budgets and is not in the CO non-attainment portion of the San Joaquin Valley.

In summary, transportation improvements ~~and land use patterns~~ identified in the 2014 RTP-SCS would result in an overall reduction of on-road vehicle emissions when compared to existing conditions established by applicable air quality plans and would not result in an increase in criteria pollutants over the future 'no build scenario.' The 2014 RTP-SCS also includes several goals and policies that would contribute to a reduction of air pollutant emissions. Therefore, impacts related to criteria pollutants are less than significant. No mitigation is required.

Mitigation Measures. None required.

Significance after Mitigation. The operational impacts of the 2014 RTP-SCS on the attainment of state and federal air quality standards are less than significant.

**Impact AQ-3 ~~The transportation improvement projects and the land use envisioned by the 2014 RTP-SCS may facilitate increased exposure of sensitive receptors to hazardous air pollutants that may cause health risks.~~ Implementation of the 2014 RTP-SCS would result in a regional decrease in toxic air emissions when compared to the 2013 EIR baseline and applicable air quality plan baselines, and would not result in an increase in toxic air emissions when compared to the future 'no build' scenario. However, the transportation improvement projects envisioned by the 2014 RTP-SCS may facilitate increased exposure of sensitive receptors to hazardous air pollutants that may cause health risks localized increases may occur as a result of development facilitated by the 2014 RTP-SCS land use scenario. Impacts would be Class II, significant but mitigable.**

Diesel particulate matter is classified as the primary airborne carcinogen in the State. ARB reports that diesel particulate matter represents about 70 percent of the potential cancer risk from vehicle travel on a typical urban freeway. As discussed above, the significance threshold for long-term public health risk is set at 10 excess cancer cases in a million for cancer risk. For non-cancer risk, the significance level is set at a Hazard Index of more than one (1.0). The Hazard Index of more than one means that predicted levels of a toxic pollutant are greater than the exposure level, which is generally considered acceptable. If a formal health risk assessment shows that a significant impact results, mitigation measures to reduce the predicted levels of toxic air pollutants from the facility to a level of insignificance may be imposed by the lead



agency. In addition, diesel exhaust has a distinct odor, which is primarily a result of hydrocarbons and aldehydes contained in diesel fuel. In addition to the health risks associated with diesel exhaust, the odors associated with diesel exhaust could be a nuisance to nearby receptors.

An analysis of 2040 on-road mobile source diesel PM<sub>10</sub> and diesel PM<sub>2.5</sub> emissions is shown in Table 4.2-7. Results indicate that for diesel PM<sub>10</sub> and diesel PM<sub>2.5</sub>, 2014 RTP-SCS emissions for 2040 would be below 2013 EIR baseline emission levels and would be equal to emissions associated with the future 'no build scenario'. In addition, projected 2014 RTP-SCS emissions for diesel PM<sub>10</sub> would be significantly reduced below 2005 existing conditions established by the 2007 PM<sub>10</sub> Maintenance Plan. Therefore, impacts related to diesel particulate matter exposure at the regional level would be less than significant.

While toxic air contaminant concentration and health risks within any given distance of mobile sources in the region would decrease or remain the same (see Table 4.2-7), exposure is primarily based on local parameters (e.g., average daily traffic (ADT) on local roadway segment, wind direction in relation to source and receptor) and as such, the health risks adjacent to high volume roadways and transportation facilities would remain higher than regional averages.

**Table 4.2-7  
 On-Road Mobile Source Toxics Comparison**

Scenario	Analysis Year	Diesel PM <sub>10</sub> (tons/day)	Diesel PM <sub>2.5</sub> (tons/day)
2013 EIR Baseline	2013	0.30	0.23
2040 No Build Scenario	2040	0.24	0.14
2040 Preferred Scenario (with 2014 RTP-SCS)	2040	0.24	0.14

*Source: The on-road mobile source criteria pollutant emissions estimates for the 2014 RTP-SCS were calculated using CARB's EMFAC2011 emission inventory model.*

The population residing close to freeways or busy roadways may experience adverse health effects beyond those typically found in urban areas. CARB, in the *Air Quality and Land Use Handbook: A Community Health Perspective* (June 2005) recommends avoiding siting new sensitive land uses, such as residences, schools, daycare centers, playgrounds, or medical facilities, within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day. Additional non-cancer health risk attributable to proximity to freeways was seen within 1,000 feet and was strongest within 300 feet. California freeway studies show about a 70% drop-off in particulate pollution levels at 500 feet (CARB, 2005). As discussed above, proximity to freeways increases cancer risk and exposure to particulate matter. Similarly, proximity to heavily travelled transit corridors and intersections would expose residents to higher levels of diesel particulate matter and carbon monoxide.

As discussed in Section 2.0, *Project Description*, a strategy of the 2014 RTP-SCS and land use scenario is to direct growth adjacent to transit and other transportation facilities which could result in more people being exposed to elevated health risks as compared to areas of the region more distant from such facilities. The location and pattern of the proposed 2014 RTP-SCS growth would influence travel behavior, and provide a means to determine the impact of future vehicle emissions in the proposed plan area. A compact growth pattern served by an efficient



and diverse transportation system facilitates a reduction in automotive travel and increases walking, bicycling, and transit use—all of which reduce individual vehicle trips and associated VMT (refer to Section 4.12, *Transportation and Circulation*). Reduced VMT and vehicle trips are directly linked to reduced regional criteria air pollutant emissions and toxic air emissions from mobile sources. It is important to note that a variety of other factors contribute to the declines in contaminant emissions compared to existing conditions, including vehicle technology, cleaner fuels, and fleet turnover. However, in order to achieve the greatest VMT reductions from a compact growth pattern, development also must necessarily be in close proximity to public transit and major roadway corridors. Although the precise location and density of such development of projects and sensitive receptors is not known at this time, the proposed 2014 RTP-SCS may result in new sensitive receptors close to existing and new hazardous air pollutant sources, potentially resulting in the exposure to substantial hazardous air pollutants concentrations. Therefore, impacts would be potentially significant. The siting of new sensitive receptors would be subject to an individual jurisdiction's land use approval processes and would be analyzed on an individual project basis and subject to mitigation measures identified below.

Mitigation Measures. Consistent with the provisions contained in the *California Air Resources Board Air Quality and Land Use Handbook* (June 2005), transportation project sponsors shall can and -should identify appropriate measures for transportation projects with, to be incorporated into project building design for residential, school and other sensitive uses located within 500 feet of freeways, heavily travelled arterials, railways and other sources of diesel particulate matter and other known carcinogens. The appropriate measures shall should include one or more of the following methods as applicable:

- AQ-3(a)**      The transportation project sponsor shall retain a qualified air quality consultant to prepare a health risk assessment in accordance with the California Air Resources Board and the Office of Environmental Health and Hazard Assessment requirements to determine the exposure of project nearby residents/occupants/users to stationary air quality polluters to a transportation project prior to issuance of a demolition, grading, or building permit. The health risk assessment shall be submitted to the Lead Agency for review and approval. The sponsor shall implement the approved health risk assessment recommendations to any nearby sensitive receptor structures/buildings, if any. Such measures may include:
- ~~Do not locate sensitive receptors near the entry and exit points of a distribution center.~~
  - ~~Do not locate sensitive receptors in the same building as a perchloroethylene dry cleaning facility.~~
  - ~~Maintain a 50 foot buffer from a typical gas dispensing facility (under 3.6 million gallons of gas per year).~~
  - Install, operate and maintain in good working order a central heating and ventilation system or other air take system in the building of a sensitive receptor that would be impacted by the project, or in each individual residential unit, that meets the

efficiency standard of the minimum efficiency reporting value 13. The heating and ventilation 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 high efficiency particulate absorption filters or American Society of Heating, Refrigeration, and Air-Conditioning Engineers 85% supply filters should be used.

- ~~Retain a qualified heating and ventilation consultant or high efficiency particulate absorption rate during the design phase of the project to locate the heating and ventilation system based on exposure modeling from the mobile and/or stationary pollutant sources.~~
- Ensure that ~~Maintain~~ positive pressure occurs within the building.
- Achieve a performance standard of at least one air exchange per hour of fresh outside filtered air.
- Achieve a performance standard of at least 4 air exchanges per hour of recirculation.
- Achieve a performance standard of 0.25 air exchanges per hour of in unfiltered infiltration if the building is not positively pressurized.

Significance after Mitigation. With the implementation of the above mitigation, impacts related to potential health risks would be less than significant.

**Impact AQ-4 Re-entrained dust has the potential to increase airborne PM<sub>10</sub> and PM<sub>2.5</sub> levels in Kings County. The increase in growth ~~expected~~ envisioned by the General Plans of local agencies through the 2014 RTP-SCS planning horizon would result in additional vehicle miles traveled, which would add to the PM<sub>10</sub> and PM<sub>2.5</sub> levels in the area. However, re-entrained dust levels would be lower with the 2014 RTP-SCS than the 2013 EIR baseline and SIP conformity budgets established by the applicable air quality plans. In addition, with implementation of SJVAPCD control measures to reduce such emissions, impacts would be Class III, *less than significant*.**

Re-entrained dust would be generated by roadway activity (i.e., roadway dust kicked up by moving vehicles on paved and unpaved roadways). In addition, dust from construction activity would add to regional dust levels. The synergistic effects of road dust (typically measured as PM<sub>10</sub>) with ozone and the hazardous constituents of re-entrained road dust itself (carcinogens, irritants, pathogens) may affect human health by contributing to respiratory illnesses such as asthma and allergies. Although motor vehicle emission control advances have allowed vehicle tailpipe emissions of some pollutants to decrease over the last 20 years, the number of vehicles

in use and the amount of vehicle activity has continued to increase. This would suggest that re-entrained road dust has increased as well.

Re-entrained roadway dust as well as roadway construction dust emissions are included in the estimation of criteria pollutant emissions for PM<sub>2.5</sub> and PM<sub>10</sub> discussed in Impacts AQ-1 and AQ-2 above. As discussed, emissions levels for PM<sub>2.5</sub> and PM<sub>10</sub> criteria pollutants would be reduced substantially from the the SIP conformity budgets with the implementation of the 2014 RTP-SCS. In addition, the 2014 RTP-SCS does not result in an increase in criteria pollutant emissions over the 'no build scenario in 2040. Increased vehicle miles travelled may contribute to an increase in re-entrained roadway dust; however, the 2014 RTP-SCS would result in fewer VMTs when compared to the 'no build scenario. As a result, re-entrained dust emissions would be lower under the 2014 RTP-SCS when compared to the 'no build scenario.

Mitigation Measures. None required.

Significance after Mitigation. Impacts are Class III, less than significant.

**Impact AQ-5 The proposed 2014 RTP-SCS would reduce emissions of ozone precursors to levels below those identified in the applicable air quality plans. Therefore, impacts related to consistency of the 2014 RTP-SCS with air quality plans would be Class III, less than significant.**

As discussed in Impact AQ-2, policies and land use patterns facilitated by the 2014 RTP-SCS are projected to reduce emissions of ozone precursors below SIP conformity budget levels outlined in the air quality plans. This decrease in emissions is due to the proposed transportation improvements and land use patterns, consistent with adopted General Plans, envisioned by the 2014 RTP-SCS, which, among other strategies, encourages infill and mixed use development. This strategy selectively increases residential and commercial land use capacity within existing transit corridors, shifting a greater share of future growth to these corridors, ultimately increasing density, improving circulation and multi-modal connections, and leading to lower average VMT (refer to Section 4.12, *Transportation and Circulation*).-Reduced VMT and vehicle trips would result in reduced regional criteria air pollutant emissions and toxic air contaminant emissions from mobile sources.

Another consideration of consistency is how the 2014 RTP-SCS implements/promotes the on-road mobile source emission control strategy in the air quality plans. The air quality plans identify transportation control measures (TCMs) (see Table 4.2-8) as a way to attain the air quality goals specified in the Clean Air Act. TCMs work by altering the way motor vehicles are used by reducing total vehicle miles traveled at critical times and places, and reducing the use of highly polluting operating modes. TCMs reduce emissions from on-road motor vehicles and trucks by: improving the existing transportation system to allow motor vehicles to operate more efficiently; inducing people to change their travel behavior to less polluting modes; or, ensuring emission control technology improvements in the motor vehicle fleet are fully and expeditiously realized.

Consistent with the TCMs in the SJVAPCD air quality plans, the 2014 RTP-SCS identifies other means of reducing potential emissions beyond what can be reflected in KCAG’s travel model (e.g., increasing bus routes, pedestrian/bicycle improvements, etc.). The transportation projects, ~~land use patterns~~, and policies identified in the 2014 RTP-SCS are designed to improve transportation congestion and reduce VMT. The 2014 RTP-SCS projects and policies promote the implementation of the transportation control measures (TCMs) identified in the SJVAPCD air quality plans. In addition, as discussed above, implementation of the 2014 RTP-SCS would reduce emissions of ozone precursors below SIP conformity budget levels.

**Table 4.2-8  
 SJVAPCD Transportation Control Measures Contributing  
 to Continued PM<sub>2.5</sub> and PM<sub>10</sub> Improvement**

TCMs	
(i)	Improved Public Transit
(ii)	High-Occupancy Vehicle (HOV) Lanes
(iii)	Employer-Based Plans and Incentives
(iv)	Trip-Reduction Ordinances
(v)	Traffic Flow Improvements
(vi)	Fringe and Transportation Corridor Parking Facilities for Carpool/Vanpool and Transit
(vii)	Limit or Restrict Vehicle Use in Downtown Areas
(viii)	HOV and Ride-Share Programs
(ix)	Limit Access to Roads/Sections of Metro Area to Non-Vehicular or Pedestrian Use
(x)	Bicycle Facilities
(xi)	Control Extended Idling of Vehicles
(xii)	Reduce Extreme Cold Start Emissions
(xiii)	Employer-Sponsored Flexible Work Schedules
(xiv)	Planning and Development Efforts that Reduce SOV Travel
(xv)	Construction/Re-construction of Paths, Tracks or Areas for Non-Motorized Transportation or Pedestrian Use
(xvi)	Pre-1980 Model Year Light-Duty Vehicle Scrappage

*Source: 2008 PM<sub>2.5</sub> Plan, 2007 PM<sub>10</sub> Maintenance Plan, 2007 Ozone Plan*

Mitigation Measures. None required.

Significance After Mitigation. The 2014 RTP-SCS is considered consistent with the SJVAPCD air quality plans.

**c. Specific RTP Projects That May Result in Impacts.** The proposed projects listed in Section 2.0 *Project Description*, would have the potential to result in air quality impacts. All projects that include a construction component would associate with Impact AQ-1. Projects that include roadway, rail, and transit features and/or expansions would associate with Impacts AQ-2 through AQ-4. Additional specific analysis will need to be conducted as the individual projects are designed and implemented in order to determine the actual magnitude of impact. Mitigation measures discussed above could apply to these specific projects.





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## 4.3 BIOLOGICAL RESOURCES

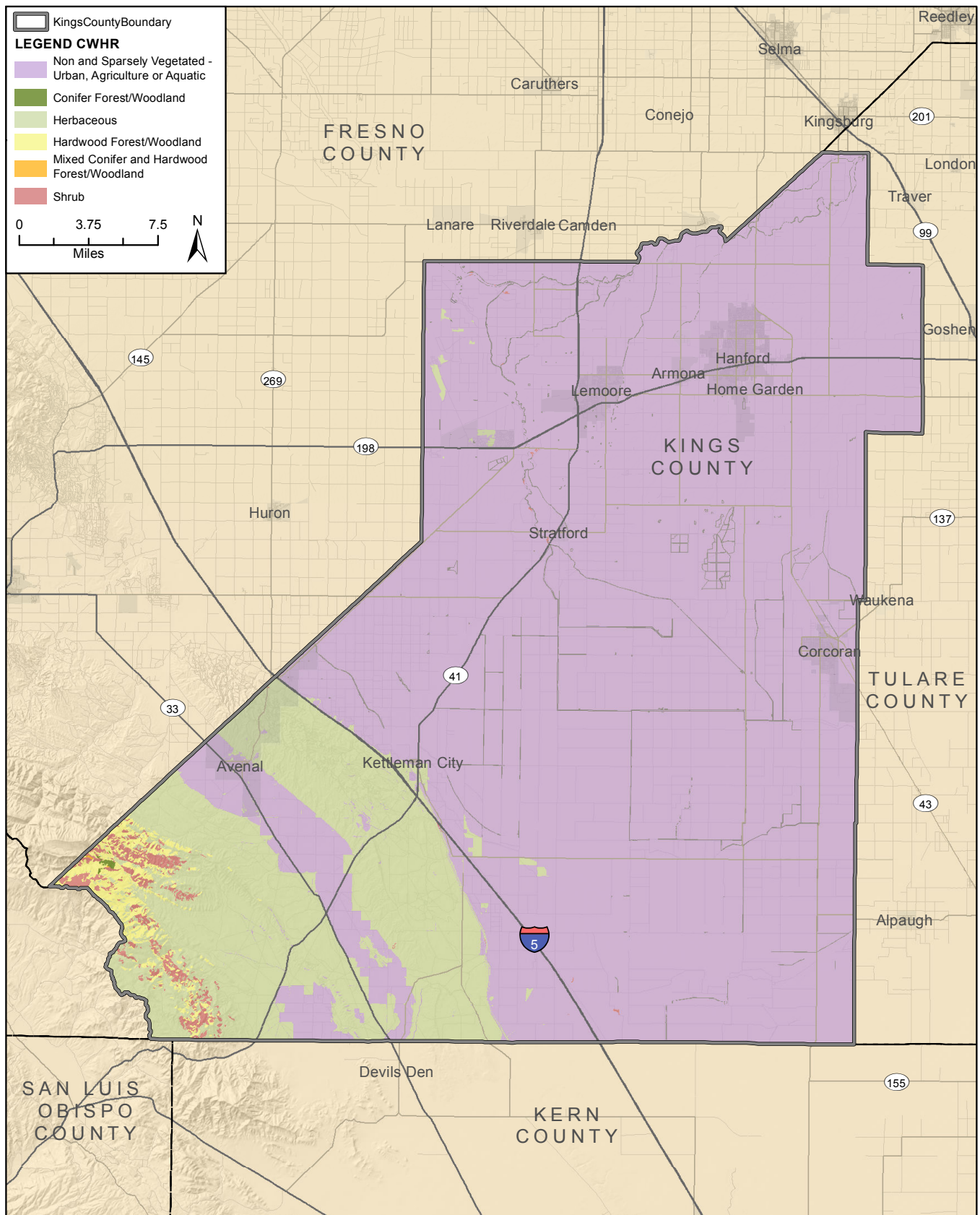
### 4.3.1 Setting

**a. Habitats.** Kings County contains a wide diversity of tree (hardwood and coniferous forests, oak woodlands), shrub (chaparrals, coastal scrubs), and herbaceous (grasslands) habitat types. Twenty three terrestrial habitat types are mapped using the California Department of Fish and Wildlife (CDFW; formerly referred to as the California Department of fish and Game) California Wildlife Habitat Relationships (CWHR) habitat classification system within Kings County (CDFW, 2008) (Figure 4.3-1). Because of the scale of this programmatic EIR, the habitat categories presented in Figure 4.3-1 depict a broad illustration of the CWHR types found within Kings County. A description of each of the habitats adapted from *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer, 1988) is presented below. Three aquatic habitat types are also designated and are discussed in 4.3.1.b below. It should be noted that these habitats are generalized and that site-specific variation is likely present. Also note that the CWHR classification system maps habitats from a broad perspective and that in many areas it is expected that two or more habitats may blend with one another. Habitats which occur within populated areas can also show variation because of a greater exposure to anthropogenic influences such as the introduction of exotic plant species.

Tree-Dominated Habitats. Kings County is home to a variety of hardwood and mixed woodlands (Figure 4.3-1). These tree-dominated habitats can support diverse wildlife populations. Riparian habitats are generally the terrestrial areas adjacent to fresh water bodies forming a vegetated corridor from stream edge to floodplain edge. Riparian habitats occur in and along the Kings River and its tributaries, as well as along the many creeks, streams, and ravines in the county. Riparian areas are rich in wildlife species, providing foraging, migration, roosting, and nesting/breeding habitat. The following are descriptions of types of tree-dominated habitats that occur within Kings County.

*Blue Oak-foothill Pine Woodland.* This habitat is typically diverse in structure both vertically and horizontally and is composed primarily of a mix of hardwoods, conifers, and shrubs. Shrub distributions tend to be clumped, with interspersed patches of annual grassland. Woodlands of this type generally tend to only have small accumulations of dead and downed woody material, compared with other tree habitats in California. Blue oak (*Quercus douglassii*) and foothill pine (*Pinus sabiniana*) typically comprise the overstory of this habitat, with blue oak usually most abundant. In the Coast Range, associated tree species include coast live oak (*Quercus agrifolia*), valley oak (*Quercus lobata*), and California buckeye. In rocky areas, interior live oak sometimes dominates the overstory especially on north-facing slopes at higher elevations. At lower elevations, where blue oaks make up most of the canopy, the understory tends to be primarily annual grasses and forbs. At higher elevations where foothill pines and even interior live oaks sometimes comprise the canopy, the understory usually includes patches of shrubs in addition to the annual grasses and forbs. Shrub species that can be associated with this habitat type include various buckbrush (*Ceanothus* spp.) species and manzanita (*Arctostaphylos* spp.). Other species found in this habitat type can include California coffeeberry (*Rhamnus californicus*), poison-oak (*Toxicodendron diversilobum*) and silver lupine (*Lupinus albifrons*). This habitat is generally located in the foothills of the Central Valley, between 500 and 3000 feet (ft) in elevation.





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 US Department of Agriculture, 2014.

California Wildlife Habitat Relationship  
 Classifications within Kings County

Figure 4.3-1

*Blue Oak Woodland.* Generally these woodlands have an over story of scattered trees, although the canopy can be nearly closed. The canopy is dominated by broad-leaved trees 16 feet to 50 feet tall, commonly forming open savanna-like stands on dry ridges and gentle slopes. Blue oak (*Quercus douglasii*) is typically the dominant tree species. Shrubs such as poison oak (*Toxicodendron diversilobum*), California coffee berry (*Frangula californica*), buckbrush (*Ceanothus cuneatus*), and redberry (*Rhamnus crocea*) are often present but rarely extensive and often occur on rock outcrops. Typical understory is composed of an extension of Annual Grassland vegetation described below.

*Juniper Woodland.* Juniper habitats are characterized as woodlands of open to dense aggregations of junipers (*Juniperus* sp.) in the form of arborescent shrubs or small trees. Juniper woodlands generally occur at middle elevations forming a transition between habitats at higher elevations. Juniper woodlands occur on virtually all exposures and slopes but are common on level to gently rolling topography. Junipers may be found on soils ranging from rocky and well drained. Slope aspect has a strong influence on the elevational distribution of junipers. On northfacing slopes, junipers range from 4,000 to 6,000 ft; whereas, on southfacing slopes, junipers range from 6,000 to 8,000 feet.

*Valley Oak Woodland.* This habitat can range in structure from savanna-like to forest-like stands. The canopies tend to be partially closed and comprised mostly of winter-deciduous, broad-leaved species such as valley oak. Dense stands typically grow in valley soils along natural drainages and decrease with the transition from lowlands to uplands. Shrubs are also associated with this habitat in lowland areas, especially along drainages. Valley oak stands with little or no grazing tend to develop a partial shrub layer of bird disseminated species, such as poison oak (*Toxicodendron diversilobum*), toyon (*Heteromeles arbutifolia*), and California coffeeberry. Ground cover consists of a well-developed carpet of annual grasses and forbs such as species of wild oat (*Avena* sp.), bromes (*Bromus* sp.), and ryegrass (*Lolium* sp.).

*Valley Foothill Riparian.* This habitat type is associated with drainages, particularly those with low velocity flows, flood plains, and gentle topography. This habitat is generally comprised of a sub-canopy tree layer dominated by cottonwoods (*Populus* sp.), sycamore (*Platanus racemosa*), and/or valley oak and an understory shrub layer typically consisting of willows (*Salix* spp.) and/or mulefat (*Baccharis salicifolia*).

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

Shrub Dominated Habitats. Shrub-dominated habitats, such as various chaparral communities, are comprised primarily of woody, evergreen shrubs and occur predominantly in the southern portion of the County. Small isolated remnant patches of shrublands also occur dispersed throughout the County. The following are descriptions of shrub-dominated habitats that occur within Kings County.

*Alkali Desert Scrub.* This habitat type typically consists of open stands of very low to moderately high grayish, spinescent, leptophyllous to microphyllous subshrubs and shrubs, which are physiognomically uniform. Shrubs and subshrubs are widely spaced and occur on in dry soils. Shrub composition within this habitat type is typically dominated by Chenopods most notably saltbush species (*Atriplex* sp.), such as the four winged (*Atriplex canescens*) saltbush and allscale (*Atriplex polycarpa*).

*Coastal Scrub.* This habitat type is typically dominated by shrub species with mesophytic leaves and shallow root systems. This habitat type can differ in composition depending upon proximity to the coastline. California sagebrush (*Artemisia californica*) tends to be common in all coastal scrub habitats. From Mount Diablo south to Santa Barbara County, black sage and California buckwheat (*Eriogonum fasciculatum*) become more abundant in mesic areas.

*Chamise-Redshank Chaparral.* This habitat type can range from nearly pure stands of chamise (*Adenostoma fasciculatum*) or redshank (*A. sparsifolium*) to a mixture of both. Mature Chamise-Redshank Chaparral is single layered, generally lacking well-developed herbaceous ground cover and over story trees. Shrub canopies frequently overlap, producing a nearly impenetrable canopy of interwoven branches. Redshank stands tend to be slightly taller and more open than chamise dominated stands. Fire occurs regularly in Chamise-Redshank Chaparral and influences habitat structure.

*Mixed Chaparral.* Mixed Chaparral is a structurally homogeneous brushland type dominated by shrubs with thick, stiff, heavily cutinized evergreen leaves. Shrub height and crown cover vary with age since last burn, precipitation, aspect, and soil type. At maturity, cismontane Mixed Chaparral typically is a dense, nearly impenetrable thicket. On poor sites, serpentine soils or transmontane slopes, shrub cover may be considerably reduced and shrubs may be shorter. Leaf litter and standing dead material may accumulate in stands that have not burned for several decades.

Herbaceous Dominated Habitats. These habitats are generally comprised of areas dominated by grasses and other non-woody species. Large areas of herbaceous dominated habitats occur in Kings County in the form of non-native grasslands. Native perennial grasslands which are dominated by perennial bunch grasses such as purple needlegrass (*Nassella pulchra*) were historically abundant within much of California but are now currently patchy in distribution. The following are descriptions of the herbaceous dominated habitats that occur within Kings County.

*Annual Grasslands.* This habitat type is composed primarily of non-native annual herbs and forbs and typically lacks shrub or tree cover. The physiognomy and species composition of annual grasslands is highly variable and also varies considerably on a temporal scale. Grazing is a common land use within this habitat type. Common grass species include wild oats (*Avena* sp.), soft chess brome (*Bromus hordeaceus*), ripgut brome (*Bromus diandrus*), and red brome (*Bromus madritensis*). Common forb species can include species of filaree (*Erodium* sp.), and bur clover (*Medicago* sp.). California poppy can also be quite common in this habitat type.

*Perennial Grassland.* Perennial grassland habitats occur in two forms in California: coastal prairie, found in areas of northern California under maritime influence, and relics in habitats now dominated by annual grasses and forbs. Perennial grassland habitats are dominated by



perennial grass species such as California oatgrass (*Danthonia californica*), Pacific hairgrass (*Deschampsia holciformis*), and sweet vernalgrass (*Anthoxanthum odoratum*). Perennial grassland habitat typically occurs on ridges and south-facing slopes, alternating with forest and scrub in the valleys and on north-facing slopes. Perennial grassland habitat of the coastal prairie form occurs along the California coast from Monterey County northward. It is found below 3,280 feet in elevation and seldom more than 62 miles from the coast. Relic perennial grasses within annual grassland habitat occur in patches throughout the state.

*Pasture.* Pasture vegetation is a mix of perennial grasses and legumes with typically complete canopy closure. Structurally this habitat type resembles annual grassland habitats. Height of vegetation varies, according to season and livestock stocking levels. Old or poorly drained pastures may have patches of weeds in excess of two feet in height. The mix of grasses and legumes varies according to management practices such as seed mixture, fertilization, soil type, irrigation, weed control, and the type of livestock on the pasture.

Developed and Sparsely/Non-Vegetated Habitats. Developed and sparsely/non-vegetated habitats are abundant in Kings County. Developed habitats are usually sparsely or non-vegetated and are associated with urban and agricultural areas and are highly disturbed. Species that occur in these areas are typically adapted to anthropogenic disturbance and/or comprised of ornamental species. Sparsely vegetated habitats also tend to be associated with rock outcrops and cliffs. The following are descriptions of developed and sparsely/non-vegetated habitats that occur within Kings County.

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

*Cropland.* This habitat type is characterized by areas in active agriculture and is an entirely man-made habitat. The structure of vegetation can vary in size, shape, and growing pattern. The dominant cropland use is row crops. Typical crops consist of grasses and forbs. Currently four subcategories of cropland habitat classifications that are recognized occur Kings County: *Dryland Grain Crop*, *Irrigated Hayfield Crop* and *Irrigated Row and Field Crop*.

- *Dryland Grain Crop.* Vegetation in the dryland (nonirrigated) grain and seed crops habitat includes seed producing grasses, primarily barley, cereal rye, oats, and wheat. These seed and grain crops are annuals.
- *Irrigated Hayfield Crop.* Vegetation in this habitat includes a variety of sizes, shapes and growing patterns. Most irrigated grain and seed crops are grown in rows. Some may exhibit complete canopy enclosure while others may have significant bare areas between rows. All seed and grain crops are annuals. They are usually planted in spring and harvested in summer or fall. However, they may be planted in rotation with other irrigated crops and sometimes winter wheat or barley may be planted after harvest of a previous crop in the fall, dry farmed (during the wet winter and early spring months) or they may be irrigated, and then harvested in the late spring.

- *Irrigated Row and Field Crop.* Vegetation in this habitat includes a variety of sizes, shapes and growing patterns. Cotton and asparagus can be three or four feet tall while others may be a foot or less high. Most irrigated row and field crops are grown in rows. Some may form 100 percent canopy while others may have significant bare areas between rows. Most are annuals, while others, such as asparagus and strawberries are perennial. The annuals are usually planted in spring and harvested in summer or fall. However, they may be planted in rotation with other irrigated crops and sometimes winter wheat or barley may be planted after harvest of a previous crop in the fall, dry farmed (during the wet winter and early spring months), and then harvested in the late spring. In some areas of southern California three crops may be grown in a year.
- *Irrigated Grain Crop.* Irrigated grain crops include corn, beans, barley, etc. Corn can reach ten feet tall while dry beans are only several inches tall. Most irrigated grain and seed crops are grown in rows. Some may form 100 percent canopy while others may have significant bare areas between rows. All seed and grain crops are annuals. Irrigated grain and seed crops are located on flat to gently rolling terrain. When flat terrain is put into crop production, it usually is leveled to facilitate irrigation. Rolling terrain is either dry farmed or irrigated by sprinklers and the soils often dictate the crops grown.

*Orchard Vineyard.* This habitat type is characterized by typically open single species tree dominated habitats. Depending on the tree type and pruning methods they are usually low, bushy trees with an open understory to facilitate harvest. Trees such as citrus, avocados, and olives are evergreen, others are deciduous. The understory is usually composed of lowgrowing grasses and other herbaceous plants, but may be managed to prevent understory growth totally or partially, such as along tree rows. Vineyards, comprised of grape vines, also share similar characteristics. Currently three subcategories of orchard vineyard habitat classifications that are recognized occur within Kings County: *Deciduous Orchard*, *Evergreen Orchard* and *Vineyard*.

- *Deciduous Orchard.* Deciduous orchards include trees, such as, almonds, apples, apricots, cherries, figs, nectarines, peaches, pears, pecans, pistachios, plums, pomegranates, prunes and walnuts. Trees range in height at maturity for many species from 15 to 30 feet, but may be 10 feet or less in pomegranates and some dwarf varieties, or 60 feet or more in pecans and walnuts. Crowns usually touch, and are usually in a linear pattern. Spacing between trees is uniform depending on desired spread of mature trees. In some orchards cover crops of resident species are present year round or are cultivated in the spring and summer. Many orchards are treated in strips down the tree rows with herbicides. The cover crop can be composed of either natural or planted domesticated herbaceous plants.
- *Evergreen Orchard.* Evergreen orchards include trees, such as, avocados, dates, grapefruit, lemons, limes, olives, oranges, tangerines, tangelos and tangors. Trees range in height at maturity for many species from 15 to 30 feet, but may be 10 feet or less in some dwarf varieties, 60 feet or more in date palms. Crowns often do not touch, and are usually in a linear pattern. Spacing between trees is uniform depending on desired spread of mature trees. The understory in evergreen orchards usually consists of bare soil due to active managements such as tillage and/or herbicides.

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

*Urban.* This habitat type is also a completely man-made habitat comprising residential, commercial, and industrial developed areas. Plant species within urban habitats are typically comprised of ornamental and other non-native invasive plant species, with large developed areas lacking vegetation.

*Barren.* This habitat type is defined by the absence of vegetation. Any habitat with less than 2 percent total vegetation cover and less than 10 percent cover by tree or shrub species is defined as barren. Structure and composition of the substrate is largely determined by the region of the state as well as surrounding environment. Examples of barren habitats include areas of exposed parent rock and talus slopes.

#### **b. Drainages and Wetlands.**

Drainages. The County contains one major river, the Kings River which drains an area of the high western Sierra Nevada and the Central Valley. Several creeks also associated with Kings County including Cross Creek and Avenal Creek (Figure 4.3-2). The drainages within these watersheds are of biological importance as they provide valuable foraging habitat, breeding habitat, and movement habitat for a wide variety of animal species, including sensitive species such as Little Kern golden trout (*Oncorhynchus aguabonita whitei*), California red-legged frog (*Rana draytonii*), and Pacific pond turtle (*Actinemys marmorata*).

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

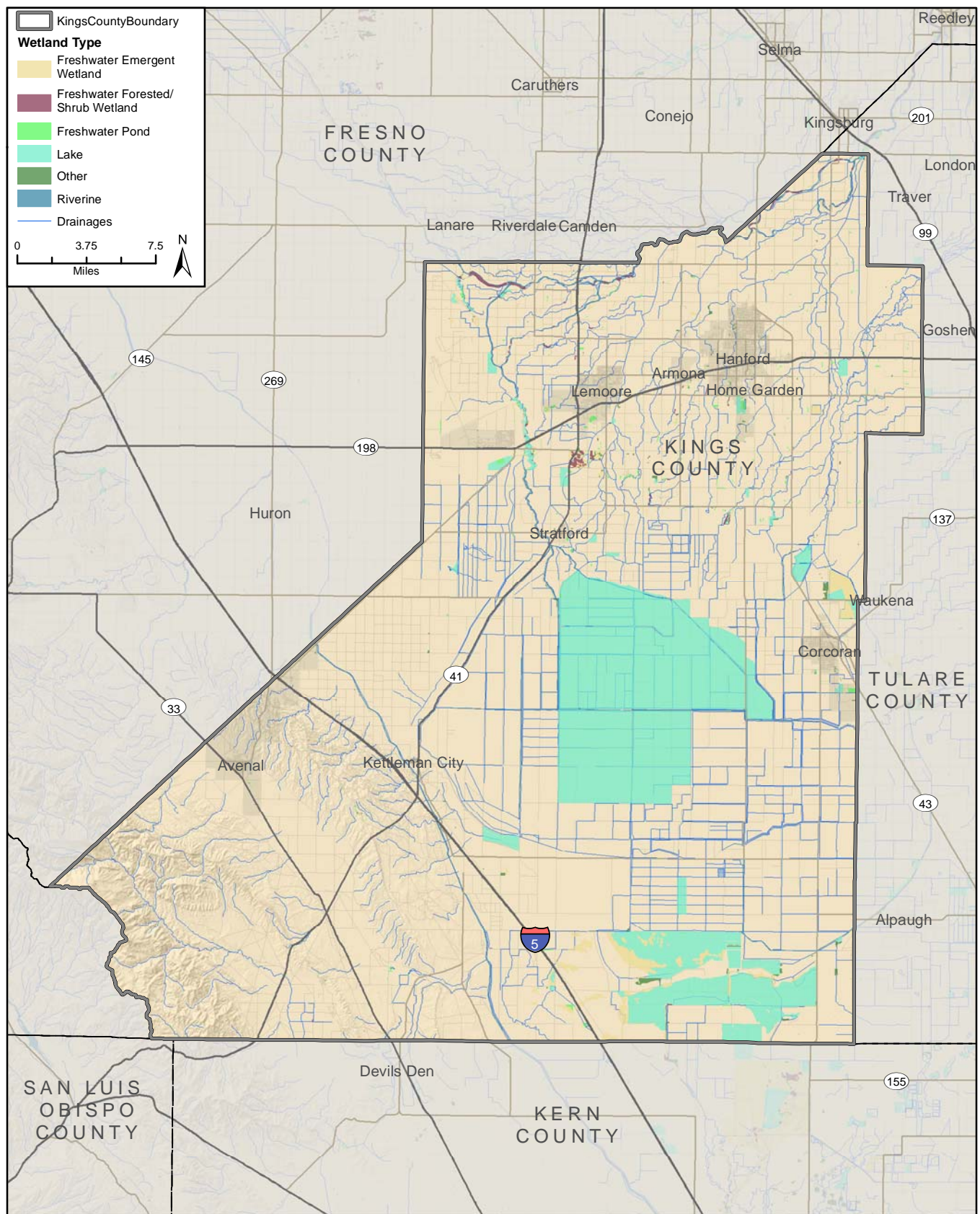
Wetlands. Wetlands are regarded as important biological resources both because of their rarity and because they serve a variety of functional values. Several types of wetlands exist in the County, including freshwater marshes, vernal pools, and riparian habitats.

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

In addition to vernal pools, several areas within Kings County contain wetlands mapped by the U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) (USFWS, 2014c). A general description of each of the classifications is provided below. Of those wetland types







National Wetlands Inventory Categories  
 and Drainages within Kings County

Figure 4.3-2

mapped by the NWI, freshwater emergent wetland, riverine and lacustrine habitats are also mapped by the CWHR.

*Freshwater Emergent Wetlands.* Freshwater emergent wetlands include all non-tidal waters dominated by emergent herbaceous plant species, mosses, and/or lichens. Wetlands of this type are also low in salinity. Wetlands which lack vegetation can be included in this class if they are less than 20 acres, do not have an active wave-formed or bedrock shoreline feature, have a low water depth less than 6.6 feet. This wetland type is also mapped by the CWHR. Freshwater emergent wetlands are characterized by erect, rooted herbaceous hydrophytes. Dominant vegetation is generally perennial monocots. All emergent wetlands are flooded frequently, enough so that the roots of the vegetation prosper in an anaerobic environment. The vegetation may vary in size from small clumps to vast areas covering several kilometers. The acreage of Fresh Emergent Wetlands in California has decreased dramatically since the turn of the century due to drainage and conversion to other uses, primarily agriculture.

*Freshwater Forested/Shrub Wetlands.* These wetlands include non-tidal waters which are dominated by trees and shrubs, with emergent herbaceous plants, mosses and/or lichens. Wetlands which lack vegetation can be included in this class if they also exhibit the same criteria as described for freshwater emergent wetlands. The vegetation found in freshwater forested/shrub wetlands are generally dominated by woody vegetation such as shrubs and trees.

*Freshwater Ponds.* Freshwater ponds include non-tidal waters with vegetative cover along its edges such as trees, shrubs, emergent herbaceous plants, mosses, and/or lichens. Freshwater ponds can be man-made or natural and typically consist of an area of standing water with variable amounts of shoreline. These wetlands and deep water habitats are dominated by plants that grow on or below the surface of the water. This wetland type is also mapped by the CWHR and categorized as lacustrine habitat which includes vernal pools.

*Lakes.* Lakes are a lacustrine system which includes wetlands and deep water habitats that are located in a topographic depression or dammed river channel. These areas tend to be greater than 20 acres. Vegetation cover within this habitat is generally less than 30 percent and often occurs in the form of emergent or surface vegetation. Substrates are composed of at least 25 percent cover of particles smaller than stones. This wetland type is also mapped by the CWHR and categorized as lacustrine habitat which also includes vernal pool complexes. Much of the area mapped by the NWI as lake was originally Tulare Lake which is now a dry lake with residual wetlands and marshes. The lake dried up after its tributary rivers were diverted for agricultural irrigation and municipal water uses. Now these areas have primarily been converted to agricultural uses.

*Riverine.* Riverine habitats are a riverine system which includes all wetlands and deep water habitats contained in natural or artificial channels that contain periodically or continuously flowing water. This system may also form a connecting link between two bodies of standing water. Substrates generally consist of rock, cobble, gravel or sand.

**c. Special Status Species and Sensitive Communities.** For the purpose of this EIR, special status species are those plants and animals listed, proposed for listing, or candidates for listing



as threatened or endangered by the USFWS under the federal Endangered Species Act; those listed or proposed for listing as rare, threatened, or endangered by the CDFW under the California Endangered Species Act (CESA); animals designated as “Species of Special Concern,” “Fully Protected,” or “Watch List” by the CDFW; and plants with a California Rare Plant Rank (CRPR) of 1, 2, 3, and 4, which are defined as:

- *List 1A = Plants presumed extinct in California;*
- *List 1B.1 = Rare or endangered in California and elsewhere; seriously endangered in California (over 80 percent of occurrences threatened/high degree and immediacy of threat);*
- *List 1B.2 = Rare or endangered in California and elsewhere; fairly endangered in California (20-80 percent occurrences threatened);*
- *List 1B.3 = Rare or endangered in California and elsewhere, not very endangered in California (<20 percent of occurrences threatened or no current threats known);*
- *List 2 = Rare, threatened or endangered in California, but more common elsewhere;*
- *List 3 = Plants needing more information (most are species that are taxonomically unresolved; some species on this list meet the definitions of rarity under CNPS and CESA);*
- *List 4.1 = Plants of limited distribution (watch list), seriously endangered in California;*
- *List 4.2 = Plants of limited distribution (watch list), fairly endangered in California (20-80 percent occurrences threatened); and*
- *List 4.3 = Plants of limited distribution (watch list), not very endangered in California.*

Queries of the USFWS Environmental Conservation Online System (ECOS): Information, Planning and Conservation System (IPaC) (USFWS, 2014b), USFWS Critical Habitat Portal (USFWS, 2014a), California Natural Diversity Database (CNDDDB) (California Department of Fish and Wildlife, 2003), and California Native Plant Society (CNPS) *Online Inventory of Rare, Threatened and Endangered Plants of California* (CNPS, 2014) were conducted. The queries were conducted to obtain comprehensive information regarding state and federally listed species, sensitive communities and federally designated Critical Habitat known to or considered to have potential to occur within Kings County.

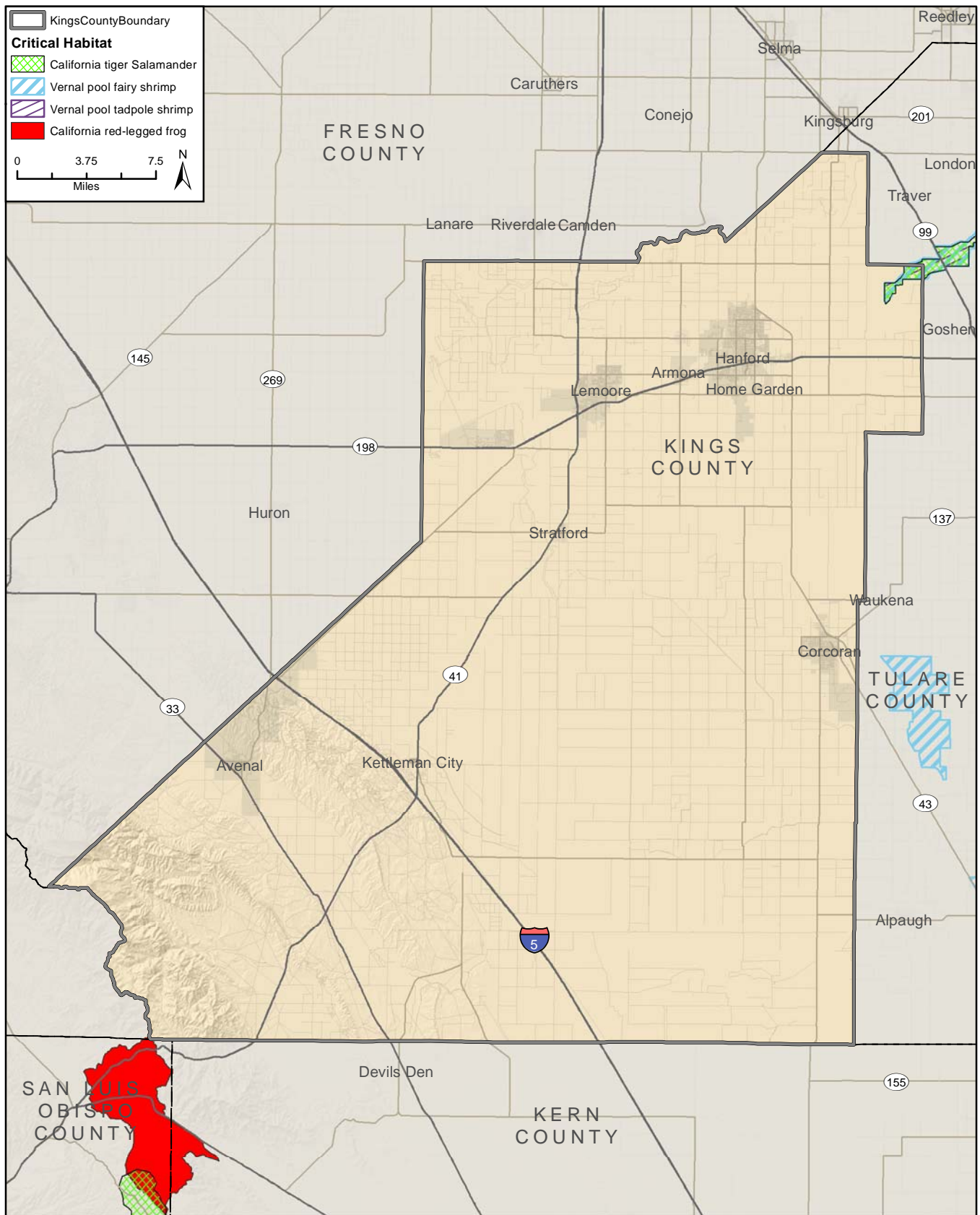
Sensitive Communities and Critical Habitat. Several natural communities considered sensitive by the CDFW occur within Kings County. The CNDDDB lists three natural communities that occur within Kings County. Federally designated critical habitat for three species also occurs in Kings County (Figure 4.3-3). These sensitive communities and critical habitats are listed in Table 4.3-1.

**Table 4.3-1  
 Sensitive Communities and Critical Habitats Documented within Kings County**

Communities Considered Sensitive by the CDFW
Valley Sacaton Grassland
Valley Saltbush Scrub
Valley Sink Scrub
Critical Habitat
California tiger salamander ( <i>Ambystoma californiense</i> )
Vernal pool fairy shrimp ( <i>Branchinecta lynchi</i> )
Vernal pool tadpole shrimp ( <i>Lepidurus packardii</i> )

*Sources: CNDDDB (CDFW, 2003); USFWS, Critical Habitat Portal (2014)*





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 U.S. Fish and Wildlife Service, April, 2014.

Federally Designated Critical Habitat:  
 Kings County

Figure 4.3-3

Special Status Plants and Animals. Kings County is home to several species protected by federal and state agencies. Important animal species can be found in a variety of habitats the County of Kings hosts. The CNDDDB (CDFW, 2003), CNPS (2014), and USFWS ECOS IPaC (2014) together list 52 special status plant (23 species) and animal (29 species) species that are known to or with potential to occur within Kings County. The status and habitat requirements for each of these species are presented in Tables 4.3-2 and 4.3-3 respectively.

**Table 4.3-2  
Special Status Animal Species Known to Occur or with  
Potential to Occur within Kings County**

Scientific Name  Common Name	Status Fed/State ESA Global Rank/State Rank CDFW	Habitat Requirements
<b>Amphibians</b>		
<i>Ambystoma californiense</i>  California tiger salamander – Central Valley DPS	FT/ST G2G3/S2S3 SSC	Vernal and seasonal pools and associated grasslands, oak savanna, woodland, and coastal scrub. Needs underground refuges (i.e., small mammal burrows, pipes) in upland areas such as grassland and scrub habitats.
<i>Rana draytonii</i>  California red-legged frog	FT/-- G4T2T3/S2S3 SSC	Semi-permanent or permanent water at least 2 feet deep, bordered by emergent or riparian vegetation, and upland grassland, forest or scrub habitats for refugia and dispersal.
<i>Spea hammondi</i>  Western spadefoot toad	--/-- G3/S3 SSC	Open areas with sandy or gravelly soils, including mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, lowlands, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains. Rain pools that do not support bullfrogs, fish, or crayfish are required for breeding.
<b>Birds</b>		
<i>Agelaius tricolor</i>  Tricolored blackbird	--/-- G2G3/S2 SSC	Requires open water, protected nesting substrate, and foraging area with insect prey within a few miles of the colony.
<i>Athene cunicularia</i>  Burrowing owl	--/-- G4/S2 SSC	Burrow sites in open dry annual or perennial grasslands, deserts and scrublands characterized by low growing vegetation. Also inhabits anthropogenic habitats such as campuses, golf courses, cemeteries, airports, and grazed pastures.
<i>Buteo swainsoni</i>  Swainson's hawk	--/ST G5/S2 --	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, & agricultural or ranch lands. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields that support rodent populations.
<i>Charadrius alexandrinus nivosus</i>  western snowy plover	FT/-- G4T3/S2 SSC	Sandy beaches, salt pond levees or shores of large alkali lakes. Sandy, gravelly or friable soils required for nesting.
<i>Dendrocygna bicolor</i>  Fulvous whistling duck	-- / -- G5 / S1 SSC	Inhabits fresh-water marsh with tule and cattail.



**Table 4.3-2  
Special Status Animal Species Known to Occur or with  
Potential to Occur within Kings County**

Scientific Name Common Name	Status Fed/State ESA Global Rank/State Rank CDFW	Habitat Requirements
<i>Falco mexicanus</i> Prairie falcon	-- / -- G5 / S3 WL	Inhabits dry, open terrain, either level or hilly. Breeding sites located on cliffs. Forages far afield, even to marshlands and ocean shores.
<i>Rallus longirostris obsoletus</i> California clapper rail	FE/SE G5T1/S1 FP	Requires saline emergent wetland habitats. Nest primarily within the lower tidal zones of these communities where cordgrass, pickleweed, and gumweed are dominants. Will bask on driftwood and forages in highers zones along mudflat interface and along tidal creeks.
<i>Plegadis chihi</i> White-faced ibis	-- / -- G5 / S1 WL	Shallow fresh-water marsh. Dense tule thickets for nesting interspersed with areas of shallow water for foraging.
<b>Invertebrates</b>		
<i>Branchinecta lynchi</i> Vernal pool fairy shrimp	FT/-- G3/S2S3 --	Endemic to the grasslands of the Central Valley, central Coast Mountains, and South Coast Mountains. Inhabits, small clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.
<i>Branchinecta conservatio</i> Conservancy fairy shrimp	FE/-- G1/S1 --	Endemic to the grasslands of the northern two-thirds of the Central Valley; found in large, turbid pools. Inhabits astatic pools located in swales formed by old, braided alluvium; filled by winter/spring rains, last until June.
<i>Desmocerus californicus dimorphus</i> Valley elderberry longhorn beetle	FT/-- G3T2/S2 --	Occurs only in the Central Valley of California, in association with blue elderberry ( <i>Sambucus mexicana</i> ). Prefers to lay eggs in elderberry 2-8 inches in diameter; some preference shown for "stressed" elderberries.
<i>Lepidurus packardii</i> Vernal pool tadpole shrimp	FE/-- G3/S2S3 --	Inhabits vernal pools and swales in the Sacramento Valley containing clear to highly turbid water. Inhabits pools commonly found in grass bottomed swales of unplowed grasslands. Some pools are mud-bottomed and highly turbid.
<i>Euproserpinus euterpe</i> Kern primrose sphinx moth	FT/-- G1/S1 --	Occurs in desert scrub, particularly in and around washes, Host plant is <i>Camissonia contorta epilobioides</i> (evening primrose).
<b>Fish</b>		
<i>Oncorhynchus aguabonita whitei</i> Little Kern golden trout	FT/-- G5T2/S2 --	Native to the Little Kern River in Tulare County. Found in clear, cold mountain streams and lakes at 5,000 to 9,000 feet. Needs well-oxygenated, gravel-bottomed shallows for spawning.



**Table 4.3-2  
Special Status Animal Species Known to Occur or with  
Potential to Occur within Kings County**

Scientific Name Common Name	Status Fed/State ESA Global Rank/State Rank CDFW	Habitat Requirements
<b>Mammals</b>		
<i>Ammospermophilus nelson</i> Nelson's antelope squirrel	--/ST G2/S2 --	Inhabits the western San Joaquin Valley from 200-1,200 feet elevation. Occurs on dry, sparsely vegetated loam soils. This species dig burrows or use kangaroo rat burrows. Needs widely scattered shrubs, forbs and grasses in broken terrain with gullies and washes.
<i>Dipodomys ingens</i> Giant kangaroo rat	FE/SE G2/S2 --	Occurs in annual grasslands on the western side of the San Joaquin Valley, marginal habitat in alkali scrub. Needs level terrain & sandy loam soils for burrowing.
<i>Dipodomys nitratooides brevinasus</i> Short-nosed kangaroo rat	-- / -- G3T1T2 / S1S2 SSC	Western side of San Joaquin Valley in grassland and desert shrub associations, especially Atriplex. Occures in highly alkaline soils around Soda Lake. Needs friable soils. Favors flat to gently sloping terrain.
<i>Dipodomys nitratooides exilis</i> Fresno kangaroo rat	FE/SE G3T1/S1 --	Occurs in alkali sink-open grassland habitats in western Fresno County. Inhabits bare alkaline clay-based soils subject to seasonal inundation, with more friable soil mounds around shrubs & grasses.
<i>Dipodomys nitratooides nitratooides</i> Tipton kangaroo rat	FE/SE G3T1/S1 --	Occurs in saltbush scrub and sink scrub communities in the Tulare Lake Basin of the southern San Joaquin Valley. Needs soft friable soils in which to escape seasonal flooding. Digs burrows in elevated soil mounds at bases of shrubs.
<i>Onychomys torridus tularensis</i> Tulare grasshopper mouse	-- / -- G5T1T2 / S1S2 SSC	Hot, arid valleys and scrub deserts in the southern San Joaquin Valley. Diet almost exclusively composed of arthropods, therefore needs abundant supply of insects.
<i>Taxidea taxus</i> American badger	--/-- G4/S4 SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats with friable soils. Needs sufficient food, friable soils, and open uncultivated ground. Cannot live in frequently plowed fields. Preys on burrowing rodents.
<i>Vulpes macrotis mutica</i> San Joaquin kit fox	FE/ST G4T2T3/S2S3 --	Occurs in annual grasslands or open stages with scattered shrubby vegetation. Requires loose sandy textured soils for burrowing.
<b>Reptiles</b>		
<i>Emys marmorata</i> Western pond turtle	--/-- G3G4/S3 SSC	Rivers, ponds, freshwater marshes; nests in upland areas (sandy banks or grassy open fields) up to 1,640 feet from water.



**Table 4.3-2  
Special Status Animal Species Known to Occur or with  
Potential to Occur within Kings County**

Scientific Name Common Name	Status Fed/State ESA Global Rank/State Rank CDFW	Habitat Requirements
<i>Gambelia sila</i> Blunt-nosed leopard lizard	FE/SE G1/S1 FP	Inhabits sparsely vegetated alkali and desert scrub habitats in areas of low topographic relief. Can commonly be found in washes.
<i>Thamnophis gigas</i> Giant garter snake	FT/ST G2G3/S2S3 --	This is the most aquatic of the garter snakes in California. Prefers freshwater marsh and low radient streams. Has adapted to drainage canals & irrigation ditches.
<i>Coluber (=Masticophis) flagellum ruddocki</i> San Joaquin whipsnake	--/-- G5T2T3/S2? SSC	Occurs in open, dry habitats with little or no tree cover. Found in valley grassland & saltbush scrub in the San Joaquin Valley. Needs mammal burrows for refuge and oviposition sites.

Sources: CNDDDB (CDFW, 2003); USFWS ECOS IPaC (2014), CDFW Special Animals List (2011).

FT = Federally Threatened

SE = State Endangered

FC = Federal Candidate Species

ST = State Threatened

FE = Federally Endangered

SR = State Rare

FS = Federally Sensitive

SS = State Sensitive

DL = Delisted

G-Rank/S-Rank = Global Rank and State Rank as per NatureServe and CDFW's CNDDDB RareFind5.

SC = CDFW Species of Special Concern FP = Fully Protected

**Table 4.3-3  
Special Status Plant Species Known to Occur or with  
Potential to Occur within Kings County**

Scientific Name Common Name	Status Fed/State ESA Global Rank/State Rank CRPR	Habitat Requirements
<i>Amsinckia furcata</i> Forked fiddleneck	-- / -- G3/ S3.2 4.2	Annual herb. Bloom period: Feb.-May. Cismontane woodland, valley and foothill grassland. Often on shale outcrops in disturbed, rather open sites. Often in gypsum-affected soils. Elevations 50-1000 m. (165-3300 ft)
<i>Atriplex cordulata var. erecticaulis</i> Earlimart orache	--/-- G3T1/S1 1B.2	Annual herb. Bloom period: Aug.-Nov. Occurs in valley and foothill grassland. Elevations: 40-100 m. (131-328 feet)
<i>Atriplex coronata var. coronata</i> Crownscale	--/ -- G4T3/S3.2 4.2	Annual herb. Bloom period: Mar.-Oct. Chenopod scrub, valley and foothill grassland, vernal pools. Fine, alkaline soils, clay soils. Elevations 1-590 m. (3-1947 feet)
<i>Atriplex coronata var. vallicola</i> Lost Hills crownscale	--/ -- G4T2/S2 1B.2	Annual herb. Bloom period Apr.-Aug. Chenopod scrub, valley and foothill grassland, vernal pools. In powdery, alkaline soils that are vernal moist with Frankenia, Atriplex spp. and Distichlis. Elevations 50-635 m. (165-2096 feet).





**Table 4.3-3  
Special Status Plant Species Known to Occur or with  
Potential to Occur within Kings County**

Scientific Name Common Name	Status Fed/State ESA Global Rank/State Rank CRPR	Habitat Requirements
<i>Atriplex depressa</i> Brittlescale	--/-- G2Q/S2.2 1B.2	Annual herb. Bloom period Apr.-Oct. Occurs in alkaline clay soils within chenopod scrub, meadows and seeps, playas, valley and foothill grassland, and vernal pools. Elevations 1-320 m. (3-1,049 feet)
<i>Atriplex subtilis</i> Subtle orache	--/-- G2/S2.2 1B.2	Annual herb. Bloom period June-Oct. Occurs in valley and foothill grassland. Elevations 40-100 m. (132-330 feet)
<i>California macrophylla</i> Round-leaved filaree	--/-- G2/S2 1B.1	Annual herb. Bloom period Mar.-May. Occurs in clay soils within cismontane woodland as well as valley and foothill grassland. Elevations 15-1,200 m. (49-3,960 feet)
<i>Caulanthus californicus</i> California jewel-flower	FE/SE G1/S1 1B.1	Annual herb. Bloom period Feb.-May. Occurs in sandy areas within chenopod scrub, pinyon and juniper woodland as well as valley and foothill grassland. Elevations 61-1,000 m. (200-3,280 feet)
<i>Caulanthus lemmonii</i> Lemmon's jewel-flower	-- / -- G3/S3 1B.2	Annual herb. Bloom period Mar.-May. Pinyon-juniper woodland, valley and foothill grassland. Elevations 80-1,220 m. (260-4,000 feet)
<i>Cirsium crassicaule</i> Slough thistle	-- / -- G2/S2 1B.1	Annual/perennial herb. Bloom period May-Aug. Occurs in chenopod scrub, marshes, swamps and sloughs, riparian scrub. Elevations 3-100 m. (10-330 feet)
<i>Deinandra halliana</i> Hall's tarplant	-- / -- G2/S2 1B.1	Annual herb. Bloom period Apr.-May. Cismontane woodland, chenopod scrub, valley and foothill grassland. Reported from a variety of substrates incl. caly, sand, and alkaline soils. Elevations 300-950 m (985-3,115ft).
<i>Delphinium recurvatum</i> Recurved larkspur	--/-- G3/S3 1B.2	Perennial herb. Bloom period Mar.-June. Occurs in alkaline soils within chenopod scrub, cismontane woodland, as well as valley and foothill grassland. Elevations 3-790 m. (9-2,607 feet)
<i>Eriastrum hooveri</i> Hoover's eriastrum	DL/-- G3/S3.2 4.2	Annual herb. Bloom period Mar.-July. Occurs in chenopod scrub, juniper and pinyon woodland, and valley and foothill grassland, sometimes on gravelly sites. Elevations 50-915 m. (165-3,020 feet)
<i>Eriogonum gossypinum</i> Cottony buckwheat	-- / -- G3/S3.2 4.2	Annual herb. Bloom period Mar.-Sep. Chenopod scrub, valley and foothill grassland. Clay soil. Elevations 100-500 m (330-1,815 feet)
<i>Lasthenia ferrisiae</i> Ferris' goldfields	--/-- G3/S3.2 4.2	Annual herb. Bloom period Feb.-May. Occurs in vernal pools (alkaline, clay). Elevations 20-700 m. (65-2,310 feet)
<i>Layia heterotricha</i> Pale-yellow layia	--/ -- G2/S2 1B.1	Annual herb. Bloom period Mar.-Jun. Cismontane woodland, pinyon-juniper woodland, valley and foothill grassland. Alkaline or clay soils; open areas. Elevations 300-1,705 m (990-5,626 feet)
<i>Madia radiata</i> Showy golden madia	--/ -- G2/S2 1B.1	Annual herb. Bloom period Mar.-May. Valley and foothill grassland, cismontane woodland, chenopod scrub. Mostly on adobe clay in grassland or among shrubs. Elevations 25-1,125 m. (80-3,690 feet)



**Table 4.3-3  
Special Status Plant Species Known to Occur or with  
Potential to Occur within Kings County**

Scientific Name Common Name	Status Fed/State ESA Global Rank/State Rank CRPR	Habitat Requirements
<i>Malacothamnus aboriginum</i> Indian Valley bush-mallow	--/ -- G2/S2 1B.2	Perennial deciduous shrub. Bloom period Apr.-Oct. Cismontane woodland, chaparral. Granitic outcrops and sandy bare soil, often in disturbed soils and burned areas. Elevations 150-1,700 m. (495-5,580 feet)
<i>Monolopia congdonii</i> San Joaquin woollythreads	FE/-- G2/S2 1B.2	Annual herb. Bloom period Feb.-May. Occurs in chenopod scrub and valley and foothill grassland (sandy). Elevations 60-800 m. (196-2,624 feet)
<i>Nama stenocarpum</i> Mud nama	--/ -- G4G5/S1S2 2B.2	Annual/perennial herb. Bloom period Jan.-Jul. Marshes and swamps. Lake shores, river banks, intermittently wet areas. Elevations 5-500 m (15-1,640 feet)
<i>Nemacladus gracilis</i> Slender nemacladus	--/-- G3/S3.3 4.3	Annual herb. Bloom period Mar.-May. Sandy or gravelly sites in cismontane woodland, valley and foothill grassland. Elevations 120-1900 m. (396-6,270 feet)
<i>Trichostema ovatum</i> San Joaquin bluecurls	--/-- G3/S3.2 4.2	Annual herb. Bloom period July-Oct. Occurs in chenopod scrub as well as valley and foothill grassland. Elevations 65-320 m. (213-1,049 feet)
<i>Tropidocarpum californicum</i> Kings gold	--/-- G1/S1 1B.1	Annual herb. Bloom period March. Chenopod scrub. Known from one occurrence near Kettleman City. Elevation 65 m. (215 feet)

Sources: CNDDDB (CDFW, 2003); USFWS ECOS IPaC (2014), CDFW Special Plants List (2013), and CNPS Rare Plant Inventory (2014).

FE = Federally Endangered FT = Federally Threatened DL = Delisted

SE = State Endangered ST = State Threatened SR = State Rare

G-Rank/S-Rank = Global Rank and State Rank as per NatureServe and CDFW's CNDDDB RareFind5.

CRPR (California Rare Plant Rank):

1A=Presumed Extinct in California

1B=Rare, Threatened, or Endangered in California and elsewhere

2=Rare, Threatened, or Endangered in California, but more common elsewhere

3=Need more information (a Review List)

4=Plants of Limited Distribution (a Watch List)

CRPR Threat Code Extension:

.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)

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

The habitats within the link do not necessarily need to be the same as the habitats that are being linked. Rather, the link merely needs to contain sufficient cover and forage to allow temporary



inhabitation by ground-dwelling species. Typically habitat linkages are contiguous strips of natural areas, though dense plantings of landscape vegetation can be used by certain disturbance-tolerant species. Depending upon the species using a corridor, specific physical resources (such as rock outcroppings, vernal pools, or oak trees) may need to be located within the habitat link at certain intervals to allow slower-moving species to traverse the link. For highly mobile or aerial species, habitat linkages may be discontinuous patches of suitable resources spaced sufficiently close together to permit travel along a route in a short period of time.

Wildlife movement corridors can be both large and small scale. The mountainous regions of Kings County may support wildlife movement on a regional scale while riparian corridors, waterways, flood control channels, canals, contiguous habitat and upland habitat on levees may provide more local scale opportunities for wildlife movement throughout the County. The CDFW BIOS (2014) mapped two essential connectivity areas within Kings County. One in the southern portion of the County in the Kettlemen Hills and the other in the eastern portion of the County primarily following Homeland Canal. These are also identified from the report, *Missing Linkages: Restoring Connectivity to the California Landscape* (Penrod et al., 2001) in addition to three other linkages in northern Kings County. These areas are identified as important movement corridors for species such as San Joaquin kit fox, blunt-nosed leopard lizard, Giant k-rat and short-nosed k-rat.

**d. Regulatory Framework.** Federal, state, and local authorities under a variety of statutes and guidelines share regulatory authority over biological resources. The primary authority for general biological resources lies within the land use control and planning authority of local jurisdictions, which in this instance is the County of Kings and local municipalities. The CDFW is a trustee agency for biological resources throughout the State under the California Environmental Quality Act (CEQA) and also has direct jurisdiction under the California Fish and Game Code (CFGC), which includes, but is not limited to, resources protected by the State of California under the California Endangered Species Act (CESA).

#### Federal and State Jurisdictions.

*United States Fish and Wildlife Service.* The USFWS implements the Migratory Bird Treaty Act (16 United States Code [USC] Section 703-711) and the Bald and Golden Eagle Protection Act (16 USC Section 668). The USFWS and National Marine Fisheries Service (NMFS) share responsibility for implementing the Federal Endangered Species Act (FESA) (16 USC § 153 *et seq.*). The USFWS generally implements the FESA for terrestrial and freshwater species, while the NMFS implements the FESA for marine and anadromous species. Projects that would result in “take” of any federally listed threatened or endangered species are required to obtain permits from the USFWS and/or NMFS through either Section 7 (interagency consultation with a federal nexus) or Section 10 (Habitat Conservation Plan) of FESA, depending on the involvement by the federal government in permitting and/or funding of the project. The permitting process is used to determine if a project would jeopardize the continued existence of a listed species and what measures would be required to avoid jeopardizing the species. “Take” under federal definition means to harass, harm (which includes habitat modification), pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.

Proposed or candidate species do not have the full protection of FESA; however, the USFWS and NMFS advise project applicants that they could be elevated to listed status at any time.

*United States Army Corps of Engineers.* Under Section 404 of the Clean Water Act, the U.S. Army Corps of Engineers (USACE) has authority to regulate activities that result in discharge of dredged or fill material into wetlands or other “waters of the United States.” Perennial and intermittent creeks are considered waters of the United States if they are hydrologically connected to other jurisdictional waters. The USACE also implements the federal policy embodied in Executive Order 11990, which is intended to result in no net loss of wetlands. In achieving the goals of the Clean Water Act, the USACE seeks to avoid adverse impacts and offset unavoidable adverse impacts on existing aquatic resources. Any discharge into wetlands or other “waters of the United States” that are hydrologically connected and/or demonstrate a significant nexus to jurisdictional waters would require a permit from the USACE prior to the start of work. Typically, when a project involves impacts to waters of the United States, the goal of no net loss of wetlands is met through compensatory mitigation involving creation or enhancement of similar habitats.

*California Department of Fish and Wildlife (formerly the California Department of Fish and Game).* The CDFW derives its authority from the Fish and Game Code of California. The California Endangered Species Act (CESA) (Fish and Game Code Section 2050 *et. seq.*) prohibits take of State-listed threatened and endangered species. Take under CESA is restricted to direct harm of a listed species and does not prohibit indirect harm by way of habitat modification. The CDFW additionally prohibits take for species designated as Fully Protected under the CFGC under various sections. Projects that would result in “take” of any state listed threatened or endangered species are required to obtain an incidental take permit (ITP) pursuant to Fish and Game Code Section 2081. The issuance of an ITP is dependent upon the following: 1) the authorized take is incidental to an otherwise lawful activity; 2) the impacts of the authorized take are minimized and fully mitigated; 3) the measures required to minimize and fully mitigate the impacts of the authorized take are roughly proportional in extent to the impact of the taking on the species, maintain the applicant’s objectives to the greatest extent possible, and are capable of successful implementation; 4) adequate funding is provided to implement the required minimization and mitigation measures and to monitor compliance with and the effectiveness of the measures; and 5) issuance of the permit will not jeopardize the continued existence of a State-listed species.

California Fish and Game Code sections 3503, 3503.5, and 3511 describe unlawful take, possession, or destruction of birds, nests, and eggs. Fully protected birds (CFGC Section 3511) may not be taken or possessed except under specific permit. Section 3503.5 of the Code protects all birds-of-prey and their eggs and nests against take, possession, or destruction of nests or eggs. Species of Special Concern (SSC) is a category used by the CDFW for those species which are considered to be indicators of regional habitat changes or are considered to be potential future protected species. Species of Special Concern do not have any special legal status except that which may be afforded by the Fish and Game Code as noted above. The SSC category is intended by the CDFW for use as a management tool to include these species into special consideration when decisions are made concerning the development of natural lands, and these species are considered sensitive as described under the CEQA Appendix G questions. The CDFW also has authority to administer the Native Plant Protection Act (NPPA) (CFGC Section 1900 *et*



seq.). The NPPA requires the CDFW to establish criteria for determining if a species, subspecies, or variety of native plant is endangered or rare. Under Section 1913(c) of the NPPA, the owner of land where a rare or endangered native plant is growing is required to notify the department at least 10 days in advance of changing the land use to allow for salvage of the plant(s).

Perennial and intermittent streams and associated riparian vegetation, when present, also fall under the jurisdiction of the CDFW. Section 1600 et seq. of the Fish and Game Code (Lake and Streambed Alteration Agreements) gives the CDFW regulatory authority over work within the stream zone (which could extend to the 100-year flood plain) consisting of, but not limited to, the diversion or obstruction of the natural flow or changes in the channel, bed, or bank of any river, stream or lake.

*Regional Water Quality Control Board.* The State Water Resources Control Board (SWRCB) and each of nine local Regional Water Quality Control Boards (RWQCB) has jurisdiction over “waters of the State” pursuant to the Porter-Cologne Water Quality Control Act which are defined as any surface water or groundwater, including saline waters, within the boundaries of the State. The SWRCB has issued general Waste Discharge Requirements (WDRs) regarding discharges to “isolated” waters of the State (Water Quality Order No. 2004-0004-DWQ, *Statewide General Waste Discharge Requirements for Dredged or Fill Discharges to Waters Deemed by the U.S. Army Corps of Engineers to be Outside of Federal Jurisdiction*). The local RWQCB enforces actions under this general order for isolated waters not subject to federal jurisdiction, and is also responsible for the issuance of water quality certifications pursuant to Section 401 of the CWA for waters subject to federal jurisdiction.

*California Department of Transportation - California Streets and Highways Code Section 156.3.* Assessments and remediation of potential barriers to fish passage for transportation projects using State or federal transportation funds are required. Such assessments must be conducted for any projects that involve stream crossings or other alterations and must be submitted to the CDFW.

Local Jurisdictions General Plans. A discussion of the various General Plans adopted within Kings County and how they pertain to the protection of biological resources is presented below.

*County of Kings.* The Resource Conservation Element of the Kings County General Plan includes several goals to protect biological resources. Various objectives are also included which pertain to, but are not limited to, protection of rare and endangered species, development in environmentally sensitive areas, and protection of riparian areas. The following goals and objectives regarding biological resources are applicable to the project in Kings County pursuant to the 2014 RTP-SCS:

*RC GOAL A1 - Beneficially use, efficiently manage, and protect water resources while developing strategies to capture additional water sources that may become available to ensure longterm sustainable water supplies for the region.*

*RC OBJECTIVE A2.1 - Maintain the existing Kings River water conveyance system as a designated floodway, and encourage the preservation of riparian habitat along the Kings River consistent with state and federally mandated flood control purposes.*



*RC GOAL D1 - Preserve land that contains important natural plant and animal habitats.*

*RC OBJECTIVE D1.1 - Require that development in or adjacent to important natural plant and animal habitats minimize the disruption of such habitats.*

*RC GOAL D2 - Maintain the quality of existing natural wetland areas as required by the California Department of Fish and Game, the United States Fish and Wildlife Service and the United States Army Corp of Engineers.*

*RC OBJECTIVE D2.1- Maintain compatible land uses in natural wetland habitats designated by state and federal agencies.*

*RC OBJECTIVE D3.1 - Ensure that, in development decisions affecting riparian environments, the conservation of fish and wildlife habitat and the protection of scenic qualities are balanced with other purposes representing basic health, safety, and economic needs.*

*RC GOAL E1 - Balance the protection of the County's diverse plant and animal communities with the County's economic needs.*

*RC OBJECTIVE E1.1 - Require mitigation measures to protect important plant and wildlife habitats.*

*RC GOAL F1 - Manage natural stream environments to provide protection for fish habitat.*

*RC GOAL H1 - Support the extraction of mineral resources in a manner that will not degrade the environment or conflict with other land uses.*

*RC OBJECTIVE H1.2 - Ensure that mineral extraction operations are designed, located and operated so that they do not harm humans or the natural environment or are incompatible with surrounding land uses.*

*City of Avenal.* The Open Space, Conservation and Parks and Recreation Element of the City of Avenal General Plan includes objectives to protect the natural resources found within the city. The following objectives are applicable to projects in Avenal pursuant to the 2014 RTP-SCS:

*A. Protect natural resources, including groundwater, soils and air quality, to meet the needs of present and future generations.*

*B. Ensure that environmental hazards, including potential flooding and impacts from agricultural practices, are adequately addressed in the development process within the City and Planning Area*

*City of Corcoran.* The Open Space, Conservation and Recreation Element of the City of Corcoran General Plan includes Natural Resources Objectives to protect the biological resources found within the city. The following objectives are applicable to projects in Corcoran pursuant to the 2014 RTP-SCS:



*A. Protect natural resources including groundwater, soils, and air quality, to meet the needs of present and future generations.*

*B. Ensure that environmental hazards including potential flooding and impacts from agricultural practices are adequately addressed in the development process within the City and the Corcoran Planning Area.*

*City of Hanford.* The Open Space, Conservation & Recreation Element of the City of Hanford General Plan includes a guiding goal and supporting objectives to protect the biological resources found within the city. The following guiding policy is applicable to projects in Hanford pursuant to the 2014 RTP-SCS:

*Goal: Designate, conserve and protect open space, peripheral agricultural areas, recreational, and historic/cultural resources in the Hanford Planning Area for current and future residents of the City.*

*OBJECTIVE OCR 6 (AQ) - Guide urban development toward vacant or under-used land within the urbanized area and direct new growth toward contiguous lands to protect agricultural lands and other open spaces used for the managed production of resources from premature urban development.*

*OBJECTIVE OCR 7 (AQ) - Encourage the provision of open space areas throughout the Planning Area through the preservation and enhancement of natural features or the joint use of other public facilities and/or rights-of-ways.*

*City of Lemoore.* The Conservation and Open Space Element of the City of Lemoore General Plan includes various goals to protect the biological resources found within the city. The following goals are applicable to projects in Lemoore, pursuant to the 2014 RTP-SCS:

*COS-G-1 - Acquire, preserve, and maintain open space and natural resources for future generations.*

*COS-G-2 - Use the open space system to meet multiple needs, including bike and trail linkages, storm water drainage and treatment, wildlife habitat, active and passive recreation, and greenbelt buffer to define the boundaries of the City.*

*COS-G-6 - Protect wetlands as necessary components to the regional ecological system and as vital and unique habitats.*

*COS-G-7 - Protect rare and endangered species.*

*COS-G-9 - Manage storm drainage to protect agricultural areas, habitats, and the ground water supply.*

Local Ordinances. Some resources are afforded protection via local ordinances such as those that impacts to trees. Some local jurisdiction's municipal codes also address compliance with environmental regulations.



### 4.3.2 Impact Analysis

**a. Methodology and Significance Thresholds.** It should be noted that the following analysis is programmatic, and encompasses the broader 2014 RTP-SCS region because final designs (which also includes project components such as potential staging areas, project access, etc.) are not developed for projects included in the 2014 RTP-SCS. Thus specific impacts to biological resources are unknown. Data used for this analysis include aerial photographs, topographic maps, the CNDDDB, the CNPS online inventory of rare and endangered plants, and accepted scientific texts to identify species. Federal special status species inventories maintained by the USFWS were reviewed in conjunction with the CNDDDB and CNPS online inventory. Other data on biological resources were collected from numerous sources, including relevant literature, maps of natural resources, and data on special status species and sensitive habitat information obtained from the California Department of Fish and Wildlife (CDFW) (formerly referred to as the California Department of Fish and Game) California Natural Diversity Data Base (CNDDDB) (2003; queried January 2013), CDFW BIOS (CDFW, 2014), the California Wildlife Habitat Relationships (CWHHR) (CDFW, 2008), the California Native Plant Society (CNPS) online *Inventory of Rare, Threatened, and Endangered Plants of California* (2014), and the U.S. Fish and Wildlife Service (USFWS) ECOS IPaC (2014b). The USFWS Critical Habitat Mapper (2014a) and National Wetlands Inventory (NWI; 2014c) were also queried.

**Evaluation Criteria.** The following thresholds are based on Appendix G of the *State CEQA Guidelines*. Impacts would be significant if the 2014 RTP-SCS would result in any of the following:

1. *Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;*
2. *Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;*
3. *Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;*
4. *Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;*
5. *Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; and/or*
6. *Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.*

The following section presents a programmatic-level discussion of the potential for impacts to sensitive biological resources from implementation of the 2014 RTP-SCS. Impacts related to





conflicts with an adopted Habitat Conservation Plan are discussed in Section 4.13, *Less than Significant Environmental Factors*.

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

**Impact B-1    Implementation of transportation improvements proposed ~~and the land use scenario~~ envisioned by the 2014 RTP-SCS may result in impacts to special status plant and animal species. Impacts would be Class II, *significant but mitigable*.**

For the purposes of this analysis, special status plant and animal species include those designations described under 4.3.1.c above, as well as locally important species including protected trees. Most of the capital improvements proposed under the 2014 RTP-SCS consist of minor expansions of existing facilities that would likely not involve construction in environmentally sensitive habitat areas. As mentioned above and presented in Tables 4.3-2 and 4.3-3, there are 52 special status species known to occur or with potential to occur within Kings County. Twenty of these species (18 animal species and 2 plant species) are given high levels of protection by the federal government through listing under FESA and/or by the State government through listing under CESA or Fully Protected. The remaining species shown in Tables 4.3-2 and 4.3-3 are protected through CEQA and/or through local ordinances. Most special-status species have very limited ranges within the subject counties and have specific habitat requirements. Special status species may also tend to be associated with sensitive habitats, such as riparian habitats and drainages.

Because of the programmatic nature of the 2014 RTP-SCS, a precise, project-level analysis of the specific impacts of individual transportation projects on special-status species is not possible at this time and the level of analysis is maintained at the County level. That said some special-status species are expected to be encountered at the locations where projects administered under the 2014 RTP-SCS would occur. Thus, it is assumed that some resources would not be avoided and that potentially significant impacts would occur.

Projects such as those that occur over or in the vicinity of rivers, creeks, and other aquatic habitats are within suitable habitat for species such as California red-legged frog (*Rana draytonii*) (Federally Threatened and State Species of Special Concern) and Little Kern golden trout (*Oncorhynchus aguabonita whitei*) (Federally Threatened). In addition projects in the vicinity of smaller water bodies such as canals and creeks have are within suitable habitat for the giant garter snake (*Thamnophis gigas*) (Federally Threatened and State Fully Protected).

In addition to the rivers and creeks that may be impacted, future transportation projects under the 2014 RTP-SCS could impact upland habitats and the sensitive plant and animal species that may occupy them. For example, San Joaquin whipsnake (*Coluber flagellum ruddocki*), a State Species of Special Concern, may be present in scrub, grassland and some woodland habitats near roads where projects could occur. Several special status bat species may be affected by proposed projects where they occur under bridges, buildings or similar structures, or in native habitat adjacent to construction areas. Furthermore, the wide variety of habitats within the 2014 RTP-SCS area can support many species of nesting birds, including sensitive species such as the State threatened Swainson's hawk (*Buteo swainsoni*) and the State Species of Special Concern burrowing owl (*Athene cunicularia*). Disturbance of special-status plants such as the federal and



state Endangered California jewel-flower (*Caulanthus californicus*) could result in reductions in local population size, habitat fragmentation, or lower reproductive success.

Direct impacts to special status species include injury or mortality occurring during implementation and/or operation of projects under the 2014 RTP-SCS. Direct impacts also include habitat modification and loss such that it results in the mortality or otherwise alters the foraging and breeding behavior substantially enough to cause injury. Indirect impacts could be caused by the spread of invasive non-native species that out-compete native species and/or alter habitat towards a state that is unsuitable for special status species. For example, the spread of certain weed species can reduce the biodiversity of native habitats, potentially eliminating special status plant species and reducing the availability of suitable forage and breeding sites for special status animal species. Indirect impacts could also result from increased access by humans and domestic animals, particularly in areas where trails may be planned. Increased human and domestic animal (especially dogs) presence foster the spread of non-native invasive plant species and disrupt the normal behaviors of animal species.

~~In addition to direct and indirect impacts that may result from transportation improvement projects, the 2014 RTP-SCS also contains a future land use scenario that envisions compact development. This land use scenario focuses future development within existing urbanized areas. As a result, encroachment into undisturbed habitat would be reduced when compared to a land use scenario that did not focus future development with existing urbanized areas. This would limit impacts to sensitive plant and animal species. However, it is possible that sensitive plant and animal species could be located on future infill project sites. As a result, compact development could impact plant and animal species that may be present on or in proximity to undeveloped infill parcels. Many special status animal species are associated with creeks even in the most densely developed urban areas. Both native and non-native trees and shrubs throughout urban areas may support nesting birds and other sensitive species. Impacts would be potentially significant.~~

Mitigation Measures. KCAG shall implement and sponsor agencies can and should implement the following mitigation measures for transportation projects identified in Table 4.3-4. These measures can and should also be implemented for future transportation development pursuant to the 2014 RTP-SCS that would result in impacts to special status animal and plant species.

- B-1(a) Biological Resources Screening and Assessment.** Because of the programmatic nature of the 2014 RTP-SCS and specific impacts for a given project are unknown at this time, on a project-by-project basis upon completion of final design, a preliminary biological resource screening shall be performed as part of the environmental review process to determine whether the project has any potential to impact biological resources. If it is determined that the project has no potential to impact biological resources, no further action is required. If the project would have the potential to impact biological resources, prior to construction, a qualified biologist shall conduct a biological resources assessment (BRA) or similar type of study to document the existing biological resources

within the project footprint plus a buffer and to determine the potential impacts to those resources. The BRA shall evaluate the potential for impacts to all biological resources including, but not limited to special status species, nesting birds, wildlife movement, sensitive plant communities/critical habitat, and other resources judged to be sensitive by local, state, and/or federal agencies. Pending the results of the BRA, design alterations, further technical studies (i.e. protocol surveys) and/or consultations with the USFWS, CDFW and/or other local, state, and federal agencies may be required. The following mitigation measures [B-1(b) through B-1(k)] shall be incorporated, only as applicable, into the BRA for projects where specific resources are present or may be present and impacted by the project. Note that specific surveys described in the mitigation measures below may be completed as part of the BRA where suitable habitat is present.

- B-1(b) Special Status Plant Species Surveys.** If completion of the project-specific BRA determines that special status plant species may occur on-site, surveys for special status plants shall be completed prior to any vegetation removal, grubbing, or other construction activity of each segment (including staging and mobilization). The surveys shall be floristic in nature and shall be seasonally-timed to coincide with the target species identified in the project-specific BRA. All plant surveys shall be conducted by a qualified biologist approved by the implementing agency no more than two years before initial ground disturbance. All special status plant species identified on-site shall be mapped onto a site-specific aerial photograph and topographic map. Surveys shall be conducted in accordance with the most current protocols established by the CDFW, USFWS, and the local jurisdictions if said protocols exist. A report of the survey results shall be submitted to the implementing agency, and the CDFW and/or USFWS, as appropriate, for review and approval.
- B-1(c) Special Status Plant Species Avoidance, Minimization, and Mitigation.** If State listed or California Rare Plant List 1B species are found during special status plant surveys [pursuant to mitigation measure B-1(b)], then the project shall be re-designed to avoid impacting these plant species, if feasible. Rare plant occurrences that are not within the immediate disturbance footprint, but are located within 50 feet of disturbance limits shall have bright orange protective fencing installed at least 30 feet beyond their extent, or other distance as approved by a qualified biologist, to protect them from harm.
- B-1(d) Restoration and Monitoring.** If special status plants species cannot be avoided and will be impacted by a project implemented under the 2014 RTP-SCS, all impacts shall be mitigated at a



minimum ratio of 2:1 (number of acres/individuals restored to number of acres/individuals impacted) for each species as a component of habitat restoration. A restoration plan shall be prepared and submitted to the jurisdiction overseeing the project for approval. (Note: if a state listed plant species will be impacted, the restoration plan shall be submitted to the CDFW for approval). The restoration plan shall include, at a minimum, the following components:

- Description of the project/impact site (i.e., location, responsible parties, areas to be impacted by habitat type);
- Goal(s) of the compensatory mitigation project [type(s) and area(s) of habitat to be established, restored, enhanced, and/or preserved; specific functions and values of habitat type(s) to be established, restored, enhanced, and/or preserved];
- Description of the proposed compensatory mitigation site (location and size, ownership status, existing functions and values);
- Implementation plan for the compensatory mitigation site (rationale for expecting implementation success, responsible parties, schedule, site preparation, planting plan);
- Maintenance activities during the monitoring period, including weed removal as appropriate (activities, responsible parties, schedule);
- Monitoring plan for the compensatory mitigation site, including no less than quarterly monitoring for the first year (performance standards, target functions and values, target acreages to be established, restored, enhanced, and/or preserved, annual monitoring reports);
- Success criteria based on the goals and measurable objectives; said criteria to be, at a minimum, at least 80 percent survival of container plants and 30 percent relative cover by vegetation type;
- An adaptive management program and remedial measures to address any shortcomings in meeting success criteria;
- Notification of completion of compensatory mitigation and agency confirmation; and
- Contingency measures (initiating procedures, alternative locations for contingency compensatory mitigation, funding mechanism).

**B-1(e)**

**Endangered/Threatened Species Habitat Assessment and Protocol Surveys.** Specific habitat assessment and survey protocol surveys are established for several federally and State Endangered or Threatened species. If the results of the BRA determine that suitable habitat may be present any such species, protocol habitat assessments/surveys shall be completed in accordance with CDFW and/or USFWS protocols prior to issuance of any



construction permits. If through consultation with the CDFW and/or USFWS it is determined that protocol habitat assessments/surveys are not required, said consultation shall be documented prior to issuance of any construction permits. Each protocol has different survey and timing requirements. The applicants for each project shall be responsible for ensuring they understand the protocol requirements.

**B-1(f)**

**Endangered/Threatened Species Avoidance and Minimization.**

The habitat requirements of endangered and threatened species throughout Kings County are highly variable. The potential impacts from any given project implemented under the 2014 RTP-SCS are likewise highly variable. However, there are several avoidance and minimization measures which can be applied for a variety of species to reduce the potential for impact, with the final goal of no net loss of the species. The following measures may be applied to aquatic and/or terrestrial species. Project sponsors shall select from these measures as appropriate.

- Ground disturbance shall be limited to the minimum necessary to complete the project. The project limits of disturbance shall be flagged. Areas of special biological concern within or adjacent to the limits of disturbance shall have highly visible orange construction fencing installed between said area and the limits of disturbance.
- All projects occurring within/adjacent to aquatic habitats (including riparian habitats and wetlands) shall be completed between April 1 and October 31, if feasible, to avoid impacts to sensitive aquatic species.
- All projects occurring within or adjacent to sensitive habitats that may support federally and/or state Endangered/Threatened species shall have a CDFW and/or USFWS-approved biologist present during all initial ground disturbing/vegetation clearing activities. Once initial ground disturbing/vegetation clearing activities have been completed, said biologist shall conduct daily pre-activity clearance surveys for Endangered/Threatened species. Alternatively, and upon approval of the CDFW and/or USFWS, said biologist may conduct site inspections at a minimum of once per week to ensure all prescribed avoidance and minimization measures are being fully implemented.
- No Endangered/Threatened species shall be captured and relocated without expressed permission from the CDFW and/or USFWS.
- If at any time during construction of the project an Endangered/Threatened species enters the construction site or otherwise may be impacted by the project, all project activities shall cease. A CDFW/USFWS-approved biologist shall

document the occurrence and consult with the CDFW and/or USFWS as appropriate.

- For all projects occurring in areas where Endangered/Threatened species may be present and are at risk of entering the project site during construction, exclusion fencing shall be placed along the project boundaries prior to start of construction (including staging and mobilization). The placement of the fence shall be at the discretion of the CDFW/USFWS-approved biologist. This fence shall consist of solid silt fencing placed at a minimum of 3 feet above grade and 2 feet below grade and shall be attached to wooden stakes placed at intervals of not more than 5 feet. The fence shall be inspected weekly and following rain events and high wind events and shall be maintained in good working condition until all construction activities are complete.
- All vehicle maintenance/fueling/staging shall occur not less than 100 feet from any riparian habitat or water body. Suitable containment procedures shall be implemented to prevent spills. A minimum of one spill kit shall be available at each work location near riparian habitat or water bodies.
- No equipment shall be permitted to enter wetted portions of any affected drainage channel.
- All equipment operating within streams shall be in good conditions and free of leaks. Spill containment shall be installed under all equipment staged within stream areas and extra spill containment and clean up materials shall be located in close proximity for easy access.
- If project activities could degrade water quality, water quality sampling shall be implemented to identify the pre-project baseline, and to monitor during construction for comparison to the baseline.
- If water is to be diverted around work sites, a diversion plan shall be submitted (depending upon the species that may be present) to the CDFW, RWQCB, USFWS, and/or NMFS for their review and approval prior to the start of any construction activities (including staging and mobilization). If pumps are used, all intakes shall be completely screened with wire mesh not larger than five millimeters to prevent animals from entering the pump system.
- At the end of each work day, excavations shall be secured with cover or a ramp provided to prevent wildlife entrapment.
- All trenches, pipes, culverts or similar structures shall be inspected for animals prior to burying, capping, moving, or filling.
- The CDFW/USFWS-approved biologist shall remove invasive aquatic species such as bullfrogs and crayfish from suitable

aquatic habitat whenever observed and shall dispatch them in a humane manner and dispose of properly.

- If any federally and/or state protected species are harmed, the CDFW/USFWS-approved biologist shall document the circumstances that led to harm and shall determine if project activities should cease or be altered in an effort to avoid additional harm to these species. Dead or injured special status species shall be disposed of at the discretion of the CDFW and USFWS. All incidences of harm shall be reported to the CDFW and USFWS within 48 hours.
- Considering the potential for projects to impact Federal and State listed species and their habitat, KCAG and sponsor agencies shall contact the CDFW and USFWS to identify mitigation banks within Kings County during development of the RTP. Upon implementation of projects included in the RTP, but on a project-by-project basis, if the results of the BRA determines that impacts to Federal and State threatened or endangered species habitat are expected, KCAG and sponsor agencies shall explore species appropriate mitigation bank(s) in the County for purchase of mitigation credits.

**B-1(g)**

**Non-Listed Special Status Animal Species Avoidance and Minimization.** Several State Species of Special Concern may be impacted by transportation projects implemented under the 2014 RTP-SCS. The ecological requirements and potential for impacts is highly wvariable among these species. Depending on the species identified in the BRA, several of the measures identified under B-1(f) shall be applicable to the project. In addition, measures shall be selected from among the following to reduce the potential for impacts to non-listed special status animal species:

- For non-listed special-status terrestrial amphibians and reptiles, coverboard surveys shall be completed within three months of the start of construction. The coverboards shall be at least four feet by four feet and constructed of untreated plywood placed flat on the ground. The coverboards shall be checked by a qualified biologist once per week for each week after placement up until the start of vegetation removal. All non-listed special status and common animals found under the coverboards shall be captured and placed in five-gallon buckets for transportation to relocation sites. All relocation sites shall be reviewed by the project sponsor and shall consist of suitable habitat. Relocation sites shall be as close to the capture site as possible but far enough away to ensure the animal(s) is not harmed by construction of the project. Relocation shall occur on the same day as capture. CNDDDB Field Survey Forms shall be submitted to the CFDW for all special status animal species observed.



- Pre-construction clearance surveys shall be conducted within 14 days of the start of construction (including staging and mobilization). The surveys shall cover the entire disturbance footprint plus a minimum 200 foot buffer, if feasible, and shall identify all special status animal species that may occur on-site. All non-listed special status species shall be relocated from the site either through direct capture or through passive exclusion (e.g., American badger). A report of the pre-construction survey shall be submitted to KCAG, RTPA, and or the local jurisdiction for their review and approval prior to the start of construction.
- A qualified biologist shall be present during all initial ground disturbing activities, including vegetation removal to recover special status animal species unearthed by construction activities.
- Upon completion of the project, a qualified biologist shall prepare a Final Compliance report documenting all compliance activities implemented for the project, including the pre-construction survey results. The report shall be submitted within 30 days of completion of the project.
- If special status bat species may be present and impacted by the project, a qualified biologist shall conduct within 30 days of the start of construction presence/absence surveys for special status bats in consultation with the CDFW where suitable roosting habitat is present. Surveys shall be conducted using acoustic detectors and by searching tree cavities, crevices, and other areas where bats may roost. If active roosts are located, exclusion devices such as netting shall be installed to discourage bats from occupying the site. If a roost is determined by a qualified biologist to be used by a large number of bats (large hibernaculum), bat boxes shall be installed near the project site. The number of bat boxes installed will depend on the size of the hibernaculum and shall be determined through consultations with the CDFW. If a maternity colony has become established, all construction activities shall be postponed within a 500-foot buffer around the maternity colony until it is determined by a qualified biologist that the young have dispersed. Once it has been determined that the roost is clear of bats, the roost shall be removed immediately.

**B-1(h)**

**Preconstruction Surveys for Nesting Birds.** For construction activities occurring during the nesting season (generally February 1 to September 15), surveys for nesting birds covered by the California Fish and Game Code and the Migratory Bird Treaty Act shall be conducted by a qualified biologist no more than 14 days prior to vegetation removal. The surveys shall include the entire





segment disturbance area plus a 200 foot buffer around the site. If active nests are located, all construction work shall be conducted outside a buffer zone from the nest to be determined by the qualified biologist. The buffer shall be a minimum of 50 feet for non-raptor bird species and at least 150 feet for raptor species. Larger buffers may be required depending upon the status of the nest and the construction activities occurring in the vicinity of the nest. The buffer area(s) shall be closed to all construction personnel and equipment until the adults and young are no longer reliant on the nest site. A qualified biologist shall confirm that breeding/nesting is completed and young have fledged the nest prior to removal of the buffer. A report of these preconstruction nesting bird surveys shall be submitted to KCAG, RTPA, and/or the local jurisdiction.

**B-1(i) Worker Environmental Awareness Program (WEAP).** Prior to initiation of construction activities (including staging and mobilization), all personnel associated with project construction shall attend WEAP training, conducted by a qualified biologist, to aid workers in recognizing special status resources that may occur in the project area. The specifics of this program shall include identification of the sensitive species and habitats, a description of the regulatory status and general ecological characteristics of sensitive resources, and review of the limits of construction and mitigation measures required to reduce impacts to biological resources within the work area. A fact sheet conveying this information shall also be prepared for distribution to all contractors, their employers, and other personnel involved with construction of the project. All employees shall sign a form documenting provided by the trainer indicating they have attended the WEAP and understand the information presented to them. The form shall be submitted to KCAG and/or the local jurisdiction to document compliance.

**B-1(j) Tree Protection.** If it is determined that construction may impact trees protected by local agencies, the project sponsor shall procure all necessary tree removal permits. A tree protection and replacement plan shall be developed by a certified arborist as appropriate. The plan shall include, but would not be limited to, an inventory of trees to within the construction site, setbacks from trees and protective fencing, restrictions regarding grading and paving near trees, direction regarding pruning and digging within root zone of trees, and requirements for replacement and maintenance of trees. If protected trees will be removed, replacement tree plantings of like species in accordance with local agency standards, but at a minimum ratio of 2:1 (trees planted to trees impacted), shall be installed on-site or at an approved off-site



location and a restoration and monitoring program shall be developed in accordance with B-1(d) and shall be implemented for a minimum of seven years or until stasis has been determined by certified arborist. If a protected tree shall be encroached upon but not removed, a certified arborist shall be present to oversee all trimming of roots and branches.

Significance After Mitigation. Compliance with the above mitigation measures and all existing state, local and/or federal regulations would reduce impacts to a less than significant level.

**Impact B-2     ~~Implementation of transportation improvements proposed and the land use scenario envisioned by the 2014 RTP-SCS may result in impacts to sensitive habitats, including federally protected wetlands. This impact would be Class II, significant but mitigable.~~**

Because of the programmatic nature of the 2014 RTP-SCS, a precise, project-level analysis of the specific impacts associated with individual transportation projects on sensitive habitats is not possible at this time. However, projects implemented under the 2014 RTP-SCS may have the potential to impact sensitive habitats. The extent and severity of the impacts is not known at this time, but some examples of potential impacts include, but are not limited to, construction and reconstruction/maintenance of bridges. These types of projects would have potential to impact riparian areas, as well as water bodies including canals.

In addition, projects in the vicinity of rivers and creeks may involve development along riparian corridors. Riparian areas provide wildlife habitat, and movement corridors, enabling both terrestrial and aquatic organisms to move along river systems between areas of suitable habitat. Construction of the proposed facilities could have both direct impacts associated with the disturbance of riparian flora and fauna and indirect impacts caused by increased erosion and sedimentation. This could adversely affect downstream water quality.

Direct impacts to sensitive habitats include loss of habitat during construction of the project. Indirect impacts include habitat degradation caused by the introduction of invasive plant species incidentally from construction equipment and through selection of invasive landscape plants, as well as erosion of disturbed areas.

~~The future land use scenario envisioned by the 2014 RTP-SCS would encourage compact development. This land use scenario focuses future development within existing urbanized areas. As a result, future development would likely result in only limited impacts riparian habitat, drainages or other sensitive habitats, though some parcels that have been relatively free of ground disturbance may contain remnants of sensitive native habitats such as valley sink scrub. Furthermore, some areas of disturbed habitats, such as annual grasslands, may be considered sensitive due to the unique assemblage of native plants, such as areas dominated by native wildflowers. Impacts would be potentially significant.~~

Mitigation Measures. KCAG shall implement and sponsor agencies can and should implement the following mitigation measures for transportation projects identified in Table 4.3-



4. ~~These measures can and should also be implemented for future development pursuant to the 2014 RTP-SCS that would result in impacts to sensitive habitats.~~ Mitigation measures B-2(c) and B-2(d) also address the potential for impacts due to invasive plant species.

**B-2(a) Jurisdictional Delineation.** If projects implemented under the 2014 RTP-SCS occur within or adjacent to wetland, drainages, riparian habitats, or other areas that may fall under the jurisdiction of the CDFW, USACE, and/or RWQCB, a qualified biologist shall complete a jurisdictional delineation. The jurisdictional delineation shall determine the extent of the jurisdiction for each of these agencies and shall be conducted in accordance with the requirement set forth by each agency. The result shall be a preliminary jurisdictional delineation report that shall be submitted to the implementing agency, USACE, RWQCB, and CDFW, as appropriate, for review and approval. If jurisdictional areas are expected to be impacted, then the RWQCB would require a Waste Discharge Requirements (WDR) permit and/or Section 401 Water Quality Certification (depending upon whether or not the feature falls under federal jurisdiction). If CDFW asserts its jurisdictional authority, then a Streambed Alteration Agreement pursuant to Section 1600 *et seq.* of the California Fish and Game Code would also be required prior to construction within the areas of CDFW jurisdiction. If the USACE asserts its authority, then a permit pursuant to Section 404 of the Clean Water Act would likely be required.

**B-2(b) Wetland and Riparian Habitat Restored.** Impacts to jurisdictional wetland and riparian habitat shall be mitigated at a minimum ratio of 2:1 (acres of habitat restored to acres impacted), and shall occur on-site or as close to the impacted habitat as possible. A mitigation and monitoring plan shall be developed by a qualified biologist in accordance with mitigation measure B-1(d) above and shall be implemented for no less than five years after construction of the segment, or until the KCAG/RTPA/local jurisdiction and/or the permitting authority (e.g., CDFW or USACE) has determined that restoration has been successful.

**B-2(c) Landscaping Plan.** If landscaping is proposed for a specific project, a qualified biologist/landscape architect shall prepare a landscape plan for that project. This plan shall indicate the locations and species of plants to be installed. Drought tolerant, locally native plant species shall be used. Noxious, invasive, and/or non-native plant species that are recognized on the Federal Noxious Weed List, California Noxious Weeds List, and/or California Invasive Plant Council Lists 1, 2, and 4 shall not be permitted. Species selected for planting shall be similar to those species found in adjacent native habitats.



**B-2(d) Invasive Weed Prevention and Management Program.** Prior to start of construction for each project, an Invasive Weed Prevention and Management Program shall be developed by a qualified biologist to prevent invasion of native habitat by non-native plant species. A list of target species shall be included, along with measures for early detection and eradication. All disturbed areas shall be hydroseeded with a mix of locally native species upon completion of work in those areas. In areas where construction is ongoing, hydroseeding shall occur where no construction activities have occurred within six (6) weeks since ground disturbing activities ceased. If exotic species invade these areas prior to hydroseeding, weed removal shall occur in consultation with a qualified biologist and in accordance with the restoration plan.

Significance After Mitigation. Compliance with the above mitigation measures and existing State, local and/or federal regulations would reduce impacts to a less than significant level.

**Impact B-3 Implementation of transportation improvements proposed ~~and the land use scenario envisioned by the 2014 RTP-SCS~~ may impact wildlife movement, including fish migration, and/or impede the use of a native wildlife nursery. This impact would be Class I, significant and unavoidable.**

Because of the programmatic nature of the 2014 RTP-SCS, a precise, project-level analysis of the specific impacts of individual transportation projects on wildlife movement and nurseries is not possible at this time. In general, the capital improvement projects envisioned in the 2014 RTP-SCS involve expansion of existing facilities in urbanized or already developed areas, rather than the construction of new or extension of existing infrastructure into undeveloped portions of each county. Several individual projects would; however, increase human activity in areas where sensitive biological resources could occur. In particular, new road construction projects could increase human activity in the vicinity of riparian areas, wildlife nurseries or corridors, and potentially sensitive habitats, if present.

Direct impacts to wildlife include increased noise and human presence during construction, as well as increased trash which may attract predators to the project site and discourage wildlife use of surrounding natural habitat. Indirect impacts include invasion of natural habitats by non-native species and increased presence of humans and domestic animals over the long-term. In addition, transportation improvement projects could include new segments of fencing or walls that that could hinder wildlife movement.

~~The future land use scenario envisioned by the 2014 RTP-SCS would encourage compact development. This land use scenario focuses future development within existing urbanized areas. The majority of the future development projects would be on parcels that provide limited or no wildlife movement. However, even the elimination of limited wildlife movement could further isolate areas of native habitat occupied by both sensitive and common native wildlife species. Impacts related to transportation projects and impacts related to the future land use scenario envisioned by the 2014 RTP-SCS would be potentially significant.~~



Mitigation Measures. KCAG shall implement and sponsor agencies can and should implement the following mitigation measures for transportation projects identified in Tables 4.3-4. ~~These measures can and should also be implemented for future development projects pursuant to the 2014 RTP-SCS that would result in that would impact wildlife movement, including fish migration, and/or impede the use of native wildlife nursery.~~

- B-3(a) Fence and Lighting Design.** All projects including long segments of fencing and lighting shall be designed to minimize impacts to wildlife. Fencing shall not block wildlife movement through riparian or other natural habitat. Where fencing is required for public safety concerns, the fence shall be designed to permit wildlife movement by incorporating design features such as:
- A minimum 16 inches between the ground and the bottom of the fence to provide clearance for small animals;
  - A minimum 12 inches between the top two wires, or top the fence with a wooden rail, mesh, or chain link instead of wire to prevent animals from becoming entangled; and
  - If privacy fencing is required near open space areas, openings at the bottom of the fence measure at least 16 inches in diameter shall be installed at reasonable intervals to allow wildlife movement.

If fencing must be designed in such a manner that wildlife passage would not be permitted, wildlife crossing structures shall be incorporated into the project design as appropriate.

Similarly, lighting installed as part of any project shall be designed to be minimally disruptive to wildlife. This may be accomplished through the use of hoods to direct light away from natural habitat, using low intensity lighting, and using a few lights as necessary to achieve the goals of the project.

- B-3 (b) Construction Best Management Practices.** The following construction Best Management Practices (BMPs) shall be incorporated into all grading and construction plans:
- Designation of a 20 mile per hour speed limit in all construction areas.
  - All vehicles and equipment shall be parked on pavement, existing roads, and previously disturbed areas, and clearing of vegetation for vehicle access shall be avoided to the greatest extent feasible.
  - The number of access routes, number and size of staging areas, and the total area of the activity shall be limited to the minimum necessary to achieve the goal of the project.
  - Designation of equipment washout and fueling areas to be located within the limits of grading at a minimum of 100 feet from waters, wetlands, or other sensitive resources as



identified by a qualified biologist. Washout areas shall be designed to fully contain polluted water and materials for subsequent removal from the site.

- Daily construction work schedules should be limited to daylight hours only, to the extent feasible.
- Mufflers shall be used on all construction equipment and vehicles shall be in good operating condition.
- Drip pans shall be placed under all stationary vehicles and mechanical equipment.
- All trash shall be placed in sealed containers and shall be removed from the project site a minimum of once per week.
- No pets are permitted on project site during construction.

Significance after Mitigation. With implementation of the above mitigation measures, potential impacts to wildlife movement and nursery sites would be reduced, but disruption to wildlife movement is still anticipated. Thus, this impact would remain Class I, *significant and unavoidable*.

**c. Specific RTP Projects That May Result in Impacts.** Table 4.3-4 identifies those projects that may create biological resource impacts, as discussed in Section 4.3.2.b. Because of the programmatic nature of the 2014 RTP-SCS specific impacts to biological resources are not known at this time. The impacts for the individual projects listed below are those that have potential to occur given this level of analysis. Additional specific analysis will need to be conducted as the individual projects are implemented and final designs completed, in order to determine the actual magnitude of impact, if any. Implementation of Mitigation Measure B-1(a) would confirm the impacts listed below for each individual project based on final design and conditions on site at the time of project implementation. Upon implementation of mitigation measure B-1(a), a given project may be determined to not necessarily have impacts on biological resources. As such, mitigation measures discussed above could apply to these specific projects.

**Table 4.3-4  
 2014 RTP-SCS Projects with Potential to Impact Biological Resources**

<b>Jurisdiction</b>	<b>Route</b>	<b>Project Location</b>	<b>Project Description</b>	<b>Impact</b>
City of Hanford	W. Lacey Blvd.	Hfd.-Arm to Mall Dr. (Interchange Project)	Widen from 2 to 6 lanes w/ median	B1, B3
City of Hanford	6th Street	Between Harris and Brown Sts.	Construct Park-n-Ride Facility	B1, B3
City of Hanford	11th Ave.	11th / Grangeville Blvd.	Intersection Improvements/Channelization	B1, B3
City of Hanford	12th Ave.	Houston Ave. to Hfd-Arm	Widen from 2 to 4 lanes w/ median	B1, B3
City of Hanford	E. Lacey Blvd.	10th Ave. to 9th Ave..	Widen from 2 to 4 lanes w/ left turn pockets	B1, B3
City of Hanford	E. Lacey Blvd.	9th Ave. to Sierra Dr.	Widen from 2 to 4 lanes w/ left turn pockets	B1, B3
City of Hanford	W. Lacey Blvd.	12 1/2 Ave. to 13th Ave.	Widen from 2 to 4 lanes w/ median	B1, B3
City of Hanford	Fargo Ave.	BN&SF to 12th Ave.	Widen from 2 to 4 lanes w/ left turn pockets	B1, B3
City of Hanford	Grangeville Blvd.	12th Ave. to 13th Ave.	Widen from 2 to 4 lanes w/ left turn pockets	B1, B3



**Table 4.3-4  
2014 RTP-SCS Projects with Potential to Impact Biological Resources**

<b>Jurisdiction</b>	<b>Route</b>	<b>Project Location</b>	<b>Project Description</b>	<b>Impact</b>
City of Hanford	Fargo Ave.	12th Ave. to 13th Ave.	Widen from 2 to 4 lanes w/ left turn pockets	B1, B3
City of Hanford	Hfd.-Arm Rd	12th Ave. 13th Ave.	Widen from 2 to 4 lanes w/ left turn pockets	B1, B3
City of Hanford	12th Ave.	Fargo Ave.to Flint Ave.	Widen from 2 to 4 lanes w/ median	B1, B3
City of Hanford	Houston Ave.	10th Ave. to 11th Ave.	Widen from 2 to 4 lanes w /median	B1, B3
City of Hanford	Houston Ave.	11th Ave. to 12th Ave.	Widen from 2 to 4 lanes w/ median	B1, B3
City of Hanford	Grangeville Blvd.	9 1/4 Ave. to Hwy 43	Widen from 2 to 4 lanes w/ median	B1, B3
City of Hanford	9th Ave.	Lacey Blvd. to Grangeville Blvd.	New arterial roadway -4 lanes w/ median	B1, B3
City of Hanford	9th Ave.	Grangeville Blvd. to Fargo Ave.	New arterial roadway -4 lanes w/ median	B1, B3
City of Hanford	11th Ave.	Houston Ave. to Idaho Ave.	Widen from 2 to 4 lanes w/ left turn pockets	B1, B3
City of Hanford	10th Ave.	Hfd. - Arm. Rd. to Houston Ave.	Widen from 2 to 4 lanes w/ left turn pockets	B1, B3
Kings County	6 <sup>th</sup> Ave	SR 198 To Fargo	Reconstruct 0.5 mile	B1, B3
Kings County	Lacey Blvd	At 13 <sup>th</sup> Avenue	Signals and bridge work	B1, B2, B3
Kings County	10 ½ Ave	Kansas to Nevada	widen to 28 feet without increasing number of lanes	B1, B3
Kings County	Avenal Cutoff Rd	Nevada Ave to I-5	Install right turn and acceleration lanes	B1, B3
Kings County	County Intersections	Various Locations	Install right turn lanes and flashing beacons	B1, B3
Kings County	Houston Ave	10th to 10 1/2)	reconstruction	B1, B3
Kings County	Jackson Ave	SR43 to 11th)	reconstruct 1.5 miles	B1, B3
Kings County	Jackson Ave	11th to 14th	reconstruct 1 mile	B1, B3
Kings County	6th Ave	Utica to Racine	reconstruct 1.5 miles	B1, B3
Kings County	Utica Ave	20th to 25th	reconstruct 1 mile	B1, B3
Kings County	18th Ave	Iona to Jersey	Install left turn lane	B1, B3
Kings County	Grangeville Blvd	SR43 to 6th	Reconstruct	B1, B3
Kings County	Grangeville Blvd	2 1/2 Ave to Highline Canal	Reconstruct	B1, B2, B3
Kings County	Excelsior Ave	R43 to 6th	reconstruct 1 mile	B1, B3
Lemoore	Cinnamon Drive	19th Ave to Hill Dr.	Bicycle/Pedestrian Facilities	B1, B3



## 4.4 CULTURAL RESOURCES

### 4.4.1 Setting

**a. Prehistoric Background.** Kings County is located in the southern San Joaquin Valley in an area known to have been inhabited by the Southern Valley Yokuts. The Southern Valley Yokuts lived in the area north of Tulare Lake and to the west in the hills near Coalinga, in Fresno County.

It is estimated that the Yokuts population, as a whole, ranged from 11,000 to 31,000 at European contact and was concentrated along waterways and on the east side of the San Joaquin River (Wallace 1978; Latta 1999). Settlements were typically composed of single-family dwellings, sweathouses, and ceremonial structures. Subsistence revolved around water resources in the San Joaquin Valley. Yokuts technology included coiled basketry, stone and bone tools, and tule rafts (Wallace 1978).

**b. Historic Background.** The first Europeans to enter the San Joaquin Valley were led by Spanish explorer Pedro Fages in 1772 (Wallace 1978). In the early 1800s, numerous Spanish expeditions entered into the San Joaquin Valley and Central Valley in general in order to search for land to establish new missions or to recapture runaway neophytes (Hoover et al. 2002). However, the Spanish never succeeded in taking control of the region and no missions were established in the Central Valley. In 1822, Mexico won its independence from Spain and began offering land grants. The American Period in California began in 1848 with the signing of the Treaty of Guadalupe Hidalgo. The discovery of gold in northern California in 1848 led to the California Gold Rush. Thousands of settlers and immigrants continued to move into the state, particularly after the completion of the transcontinental railroad in 1869.

The first European settlement in what would become Kings County was named Kingston. The town was founded in 1856 on the south bank of the Kings River. Other towns and farming communities, including Lemoore and Hanford, began appearing throughout the area, especially with the advent of the Southern Pacific Railroad in 1877. Kings County was established in 1893 from a portion of Tulare County, and later expanded from a portion of Fresno County in 1909. In the early 1900's, oil was discovered, leading to the founding of the town of Avenal in 1929. The region became one of the most productive oil fields in the country in the 1930's. In 1961, the Naval Air Station Lemoore (NASL) was developed and remains an important part of county development. Today, Kings County remains a largely agriculture-based area (Kings County 2010).

**c. Paleontological Resources Background.** Paleontological resources, also known as fossils, are the remains, traces or imprints of once living organisms preserved in rocks or sediment. Paleontological resources are commonly found in sedimentary rock units. Paleontological sites are normally discovered in cliffs, ledges, steep gullies, or along wave-cut terraces where vertical rock sections are exposed. Fossil material may be exposed by a trench, ditch, or channel caused by construction.



Paleontologists examine invertebrate fossil sites differently than vertebrate fossil sites. Invertebrate fossils in microscopic form such as diatoms, foraminifera, and radiolarians can be so prolific as to constitute major rock material in some areas. Invertebrate fossils normally are marine in origin, widespread, abundant, fairly well preserved, and predictable as to fossil sites. Therefore, the same or similar fossils can be located at any number of sites throughout central California. Vertebrate fossil sites are usually found in non-marine or continental deposits. Vertebrate fossils of continental material are usually rare, sporadic, and localized. Paleontological resources have been recorded throughout the San Joaquin Valley.

**d. Existing Cultural and Historic Resources.** In order to compile a listing of recognized significant resources, information was obtained from the State Office of Historic Preservation and the County of Kings 2035 General Plan (Kings County 2010). The statewide Historical Resources Inventory (HRI) is not available for public review according to the *California Historical Information System Information Center Rules of Operation Manual* (Section III.A). The HRI would be consulted after the determination of an Area of Potential Effect under project-level analysis of RTP-SCS transportation projects.

Table 4.4-1 presents historical resources in Kings County. Included in the table are sites listed on the National Register of Historic Places, sites designated as a California State Historic Landmark, and those that are considered historic sites of local importance by Kings County. Due to the sensitivity of many prehistoric, ethnohistoric, and historic archaeological sites, the resources listed in the following table include only those that are available to the general public. In Kings County, there are four National Register listings, three California Historical Landmarks, and 13 locally significant resources designated by Kings County.

**Table 4.4-1  
 Kings County Historical Resources**

Location/City	Resource Name	National Register	State Landmark	County Historical Site
Armona	Grangeville Cemetery			X
Corcoran	Corcoran Cemetery			X
Grangeville	Methodist Church of Grangeville			X
Hanford	Hanford Carnegie Library	X		
Hanford	Kings County Courthouse	X		
Hanford	Taoist Temple	X		
Hanford	Calvary Cemetery			X
Hardwick	Location of the Famous Mussel Slough Tragedy		X	
Hardwick	First High School			X
Kettleman City	Witt Site	X		
Kettleman City	Kettleman Hills Fossil Site			X
Kings County	Avenal Ranch			X
Kings County	Kings River Cemetery			X
Kings County	Kings River Church			X
Kings County	Lakeside Cemetery			X
Laton	Kingston		X	



**Table 4.4-1  
Kings County Historical Resources**

Location/City	Resource Name	National Register	State Landmark	County Historical Site
Lemoore	El Adobe De Los Robles Rancho		X	
Lemoore	Rhoads Cemetery			X
Lemoore	Site of Lemoore			X
Santa Rosa Rancheria	Yokut Indian Cemetery			X

Source: California Office of Historic Preservation, website, 2014; Kings County General Plan 2010

**e. Regulatory Setting.** A cultural resource may be designated as significant by National, State, or local authorities. In order for a resource to qualify for listing in the National Register of Historic Places (NHRP) or the California Register of Historical Resources (CRHR), it must meet one or more identified criteria of significance. Resources may qualify for NRHP listing if it:

- A. *Is associated with events that have made a significant contribution to the broad patterns of our history;*
- B. *Is associated with the lives of persons important in our past;*
- C. *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; or*
- D. *Has yielded, or may be likely to yield, information important in prehistory or history.*

#### 4.4.2 Impact Analysis

**a. Methodology and Significance Thresholds.** Listings of historical resources in Kings County were obtained from State Office of Historic Preservation and the Kings County General Plan. Potential areas of disturbance associated with the 2014 RTP-SCS were then compared to the identified historical sites on these lists to determine whether an impact may occur.

The significance of a cultural resource, and subsequently the significance of any impacts, is determined by whether or not that resource can increase our knowledge of the past. The determining factors are site content and degree of preservation. Where the significance of a site is unknown, it is presumed to be significant for the purposes of this EIR. A finding of archaeological significance follows the criteria established in the *State CEQA Guidelines*.

According to Appendix G of the CEQA Guidelines, the proposed project would have significant impacts on cultural resources if the project would:

- *Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5;*
- *Cause a substantial adverse change in the significant of an archaeological resource pursuant to § 15064.5;*
- *Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; or*
- *Disturb any human remains, including those interred outside of formal cemeteries.*



According to the CEQA Guidelines § 15126.4(b)(3) public agencies should, whenever feasible, seek to avoid damaging effects on any historical resource of an archaeological nature. The following factors shall be considered for a project involving such an archaeological site:

- A. *Preservation in place (avoidance) is the preferred manner of mitigating impacts to archaeological sites. Preservation in place maintains the relationship between artifacts and the archaeological context. Preservation may also avoid conflict with religious or cultural values of groups associated with the site.*
- B. *Preservation in place may be accomplished by, but is not limited to, the following:*
  - *Planning construction to avoid archaeological sites;*
  - *Incorporation of sites within parks, greenspace, or other open space;*
  - *Covering the archaeological sites with a layer of chemically stable soil before building tennis courts, parking lots, or similar facilities on the site.*
  - *Deeding the site into a permanent conservation easement.*
- C. *When data recovery through excavation is the only feasible mitigation, a data recovery plan, which makes provision for adequately recovering the scientifically consequential information from and about the historical resource, shall be prepared and adopted prior to any excavation being undertaken. Such studies shall be deposited with the California Historical Resources Regional Information Center. Archaeological sites known to contain human remains shall be treated in accordance with the provisions of Section 7050.5 Health and Safety Code.*
- D. *Data recovery shall not be required for an historical resource if the lead agency determines that testing or studies already completed have adequately recovered the scientifically consequential information from and about the archaeological or historical resource, provided that the determination is documented and that the studies are deposited with the California Historical Resources Regional Information Center.*

**b. Project Impacts and Mitigation Measures.** This section describes generalized impacts associated with the projects anticipated under the 2014 RTP-SCS. Table 4.4-2 in Section 4.4.2.c. summarizes the specific 2014 RTP-SCS projects that could result in the types of impacts discussed below.

**Impact CR-1** **Implementation of proposed transportation improvements and ~~the land use scenario~~ envisioned by the 2014 RTP-SCS could disturb known and unknown cultural resources. Impacts to archaeological and paleontological resources would be Class II, significant but mitigable and impacts to historical resources would be Class I, significant and unavoidable.**

Archaeological and Paleontological Resources. It is known that paleontological resources and archaeological resources are present throughout Kings County. Therefore, it is possible to encounter known and unknown archaeological and paleontological resources as a result of implementation of transportation improvement projects pursuant to the 2014 RTP-SCS. Many of the improvements proposed under the 2014 RTP-SCS consist of minor expansions of existing facilities that would not involve construction in previously undisturbed areas. However,



depending on the location and extent of the proposed improvement and ground disturbance, known and/or unknown cultural resources could be impacted. Representative projects that may disrupt previously undisturbed areas are listed in Table 4.4-2. The projects listed in this table were chosen based on potential to include new infrastructure. It is possible that some of the proposed roadway or bridge widening or extension projects, beyond those listed in Table 4.4-2, would adversely impact archaeological and paleontological resources. In particular, construction activities may disturb the resources, thereby exposing them to potential vandalism, or causing them to be displaced from the original context and integrity. Specific analysis will be required as individual projects are implemented.

Historic Resources. With regard to known significant historic resources, the location and nature of the proposed 2014 RTP-SCS projects listed in Section 2.0 *Project Description* were evaluated relative to the location of the historic properties listed in Table 4.4-1. It has been determined that none of the proposed improvement projects would affect any California Historical Landmarks or Kings County Landmarks. In each case, the proposed improvements are well away from a designated historic resource.

~~In addition, the 2014 RTP-SCS also contains a future land use scenario that envisions infill development and focuses future development within existing urbanized areas consistent with local General Plan land use designations. There are no specific development projects pursuant to the land use scenario envisioned by the 2014 RTP-SCS identified at this time, so a site specific evaluation is not possible at this time.~~

~~However, because future infill development could be located near or adjacent to existing historic structures, the integrity of such structures could be indirectly or directly impacted as a result. Moreover, if future infill would involve redevelopment/demolition of existing structures, it is possible that such structures could have historical significance (as determined by site-specific evaluation) given the presence of structures that are over 50 years old within the Kings County region, particularly within existing urbanized areas. Redevelopment or demolition could result in the permanent loss of historic structures. Similarly, w~~While proposed transportation projects would not impact known historic structures, it is possible that such projects may require reconstruction or demolition of transportation infrastructure or other structures that are over 50 years old, and which may be considered historically significant as determined by site-specific evaluation. Such reconstruction or demolition could result in the permanent loss of historic structures. Impacts would be potentially significant.

Summary. In conclusion, the nature of potential impacts to archaeological and paleontological resources cannot be fully evaluated at this point since the specific "Area of Potential Effects" for each improvement project has not yet been defined. However, many of the transportation projects included in the 2014 RTP-SCS will require an independent review at which time the significance of the impact can be precisely determined. As discussed above, the proposed transportation improvements envisioned by the 2014 RTP-SCS may impact known and/or unknown cultural resources. Impacts to archaeological and paleontological resources would be potentially significant.

As discussed above, impacts to historic resources would be potentially significant because future transportation improvements could directly or indirectly impact historic structures. The



nature of potential impacts cannot be fully evaluated at this point because the precise characteristics of future improvements are not known. Nonetheless, the potential for historic structures to be impacted remains.

Mitigation Measures. In general, prior to commencement of any ~~action, development or land use changes~~ transportation project on lands subject to federal jurisdiction or ~~for projects~~ involving federal funding, a cultural resource survey and an environmental analysis must be prepared. Historic resources are also protected under the regulations of the National Historic Preservation Act and the Department of Transportation Act of 1966. County and city sponsored projects would be subject to local ordinance requirements, including General Plan provisions that protect cultural resources.

In order to provide protection of cultural resources, the following mitigation measures are recommended by KCAG. Sponsor agencies can and should implement the following mitigation measures for applicable transportation projects identified in Table 4.4-2:

- CR-1(a)** The project sponsor of a 2014 RTP-SCS project involving earth disturbance, the installation of pole signage or lighting, or construction of permanent above ground structures or roadways shall ensure that the following elements are included in the project's individual environmental review:
1. Prior to construction, a map defining the Area of Potential Effects (APE) shall be prepared on a project by project basis for 2014 RTP-SCS improvements which involve earth disturbance, the installation of pole signage or lighting, or construction of permanent above ground structures. This map will indicate the areas of primary and secondary disturbance associated with construction and operation of the facility and will help in determining whether known archaeological, paleontological or historical resources are located within the impact zone.
  2. A preliminary study of each project area, as defined in the APE, shall be completed to determine whether or not the project area has been studied under an earlier investigation, and to determine the impacts of the previous project.
  3. If the results of the preliminary studies indicate additional studies are necessary; development of field studies and/or other documentary research shall be developed and completed (Phase I studies). Negative results would result in no additional studies for the project area.
  4. Based on positive results of the Phase I studies, an evaluation of identified resources shall be completed to determine the potential eligibility/ significance of the resources (Phase II studies).
  5. Phase III mitigation studies shall be coordinated with the Office of Historic Preservation, as the research design will

require review and approval from the OHP. In the case of prehistoric or Native American related resources, the Native American Heritage Commission and/or local representatives of the Native American population shall be contacted and permitted to respond to the testing/mitigation programs.

**CR-1(b)** If development of the proposed improvement requires the presence of an archaeological, Native American, or paleontological monitor, the project sponsor shall ensure that a Native American monitor, certified archaeologist, and/or certified paleontologist, as applicable, monitors the grading and/or other initial ground altering activities. The schedule and extent of the monitoring will depend on the grading schedule and/or extent of the ground alterations. This requirement can be accomplished through placement of conditions on the project by the local jurisdiction during individual environmental review.

**CR-1(c)** The project sponsor shall ensure that materials recovered over the course of any given improvement are adequately cleaned, labeled, and curated at a recognized repository. This requirement can be accomplished through placement of conditions on the project by the local jurisdiction during individual environmental review.

**CR-1(d)** The project sponsor shall ensure that mitigation for potential impacts to significant cultural resources includes one or more of the following:

- Realignment of the project right-of-way (avoidance; the most preferable method);
- Capping of the site and leaving it undisturbed;
- Addressing structural remains with respect to NRHP guidelines (Phase III studies);
- Relocating structures per NRHP guidelines;
- Creation of interpretative facilities; and/or
- Development of measures to prevent vandalism.

This can be accomplished through placement of conditions on the project by the local jurisdiction during individual environmental review.

Significance After Mitigation. Implementation of the above measures would reduce potential impacts to archaeological and paleontological resources to a less than significant level. Impacts related to historic structures would remain significant and unavoidable because redevelopment or demolition that may be required to implement transportation improvements may result in the permanent loss of historic structures.

**c. Specific 2014 RTP-SCS Projects That May Result in Impacts.** Table 4.4-2 identifies representative projects with the potential to cause or contribute to direct or indirect impacts to



cultural resources such as those discussed in Section 4.4.2.b above. These projects were chosen based on their scope and potential to include the development of new transportation infrastructure. While many projects have the potential to impact cultural resources, those requiring substantial ground disturbance in undisturbed areas have greater potential to impact prehistoric archaeological resources. Projects located in urban infill or previously disturbed areas have a greater potential to impact historic built environment resources, as well as historic archaeological resources in older developed areas. Additional specific analysis will be required as individual projects are implemented to determine the actual magnitude of impact. Mitigation measures discussed above would apply to these specific projects.

**Table 4.4-2  
RTP Projects that May Result in Cultural Resource Impacts**

<b>Community</b>	<b>Facility</b>	<b>Project Description</b>	<b>Impact</b>
Corcoran	Whitley Avenue from Otis to Pickerell Avenue	Streetscape, Traffic Calming, Street Improvements	CR-1
Hanford	West Lacey Boulevard from Hanford Armona Road to Mall Drive	Widen from 2 to 6 Lanes with Median	CR-1
Hanford	6 <sup>th</sup> Street between Harris Street and Brown Street	Construct Park-n-Ride Facility	CR-1
Hanford	11 <sup>th</sup> Avenue and Grangeville Boulevard	Intersection Improvements and Channelization	CR-1
Hanford	12 <sup>th</sup> Avenue between Houston Avenue and Hanford Armona Road	Widen from 2 to 4 Lanes with Median	CR-1
Hanford	East Lacey Boulevard between 10 <sup>th</sup> Avenue and 9 <sup>th</sup> Avenue	Widen from 2 to 4 lanes with Left Turn Pockets	CR-1
Hanford	East Lacey Boulevard between 9 <sup>th</sup> Avenue and Sierra Drive	Widen from 2 to 4 Lanes with Left Turn Pockets	CR-1
Hanford	West Lacey Boulevard between 12 ½ Avenue to 13 <sup>th</sup> Avenue	Widen from 2 to 4 Lanes with Median	CR-1
Hanford	Fargo Avenue between BN&SF and 12 <sup>th</sup> Avenue	Widen from 2 to 4 Lanes with Left Turn Pockets	CR-1
Hanford	Grangeville Avenue from 12 <sup>th</sup> Avenue to 13 <sup>th</sup> Avenue	Widen from 2 to 4 Lanes with Left Turn Pockets	CR-1
Hanford	Fargo Avenue from 12 <sup>th</sup> Avenue to 13 <sup>th</sup> Avenue	Widen from 2 to 4 Lanes with Left Turn Pockets	CR-1
Hanford	Fargo Avenue between 12 <sup>th</sup> Avenue and 13 <sup>th</sup> Avenue	Install Traffic Signals and Pedestrian Facilities	CR-1
Hanford	Hanford Armona Road between 12 <sup>th</sup> Avenue and 13 <sup>th</sup> Avenue	Widen from 2 to 4 Lanes with Left Turn Pockets	CR-1
Hanford	12 <sup>th</sup> Avenue between Fargo Avenue and Flint Avenue	Widen from 2 to 4 Lanes with Median	CR-1
Hanford	Houston Avenue from 10 <sup>th</sup> Avenue to 11 <sup>th</sup> Avenue	Widen from 2 to 4 Lanes with Median	CR-1
Hanford	Houston Avenue from 11 <sup>th</sup> Avenue to 12 <sup>th</sup> Avenue	Widen from 2 to 4 Lanes with Median	CR-1
Hanford	Grangeville Boulevard from 9 ¼ Avenue to Highway 43	Widen from 2 to 4 Lanes with Median	CR-1
Hanford	9 <sup>th</sup> Avenue from Grangeville Boulevard to Fargo Avenue	New Arterial Roadway- 4 Lanes with Median	CR-1
Hanford	11 <sup>th</sup> Avenue from Houston Avenue to Idaho Avenue	Widen from 2 to 4 Lanes with Left Turn Pockets	CR-1
Hanford	10 <sup>th</sup> Avenue from Hanford Armona Road to Houston Avenue	Widen from 2 to 4 Lanes with Left Turn Pockets	CR-1



**Table 4.4-2  
RTP Projects that May Result in Cultural Resource Impacts**

<b>Community</b>	<b>Facility</b>	<b>Project Description</b>	<b>Impact</b>
Kings County	6 <sup>th</sup> Avenue from State Route 198 to Fargo Road	Reconstruct 0.5 mile	CR-1
Kings County	Lacey Boulevard at 13 <sup>th</sup> Avenue	Signals and Bridge Work	CR-1
Kings County	10 ½ Avenue from Kansas Avenue to Nevada Avenue	Widen to 28 Feet Without Increasing Number of Lanes	CR-1
Kings County	Avenal Cutoff Road from Nevada Avenue to Interstate 5	Install Right Turn and Acceleration Lanes	CR-1
Kings County	County Intersections at Various Locations	Install Right Turn Lanes and Flashing Beacons	CR-1
Kings County	Jackson Avenue from State Route 43 to 11 <sup>th</sup> Avenue	Reconstruct 1.5 Miles	CR-1
Kings County	Jackson Avenue from 11 <sup>th</sup> Avenue to 14 <sup>th</sup> Avenue	Reconstruct 0.5 Miles	CR-1
Kings County	6 <sup>th</sup> Avenue from Utica Avenue to Racine Road	Reconstruct 1.5 Miles	CR-1
Kings County	Utica Avenue from 20 <sup>th</sup> Street to 25 <sup>th</sup> Street	Reconstruct 1 Mile	CR-1
Kings County	18 <sup>th</sup> Avenue from Iona Road to Jersey Road	Install Left Turn Lane	CR-1
Kings County	Grangeville Boulevard from State Route 43 to 6 <sup>th</sup> Avenue	Reconstruct	CR-1
Kings County	Grangeville Boulevard from 2 ½ Avenue to Highline Canal	Reconstruct	CR-1





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## 4.5 ENERGY

To assure that energy implications are considered in project decisions, the California Environmental Quality Act (CEQA) requires that EIRs include a discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy.

### 4.5.1 Setting

Energy relates directly to environmental quality. Energy use can adversely affect air quality and other natural resources. Fossil fuels are burned to create electricity which powers homes and commercial/industrial buildings, to create heat and to power vehicles. Seventy percent (70%) of greenhouse gas production (GHGs) in California is caused by burning fossil fuels for these types of uses; this pollution is linked to changes in global climate and depletion of stratospheric ozone (California Air Resources Board, 2008).

Transportation energy use is related to the fuel efficiency of cars, trucks and public transportation; choice of different travel modes (auto, carpool, and public transit); and miles traveled by these modes. Construction and routine operation and maintenance of transportation infrastructure also consume energy. In addition, residential, commercial and industrial land uses consume energy, typically through the usage of natural gas and electricity.

**a. Energy Supply.** Natural gas-fired generation has been the dominant source of electricity in California for many years. However, the two largest sources of energy produced in California are crude oil, at approximately 1,123.4 trillion ( $10^{12}$ ) British Thermal Units (BTU), and renewable energy sources, at approximately 812.8 trillion ( $10^{12}$ ) BTU. Other sources of energy produced in California include nuclear electric power, natural gas, and biofuel (Energy Information Administration [EIA], 2014).

The majority of oil and gas fields within Kings County are located in the southwestern corner of the county borders, along the Interstate 5 highway (I-5) (CA Department of Conservation Well Finder). The largest among them is the Kettleman North Dome Oil Field, which lies between City of Avenal and to the west of the I-5. The Kettleman North Dome Oil Field is the fifteenth largest field in the state by total oil recovery, and of the top twenty oil fields in the state it is the closest to exhaustion, with less than one-half of one percent of its total original oil remaining in place (CA Department of Conservation Annual Report 2006).

In 2012, Kings County had 175 active wells that produced 190,197 barrels of oil and 343,945 total thousand cubic feet (Mcf) of natural gas (California Department of Conservation, 2012 Annual Report Oil and Gas Production by County). This level of oil production represents a general decline in overall oil production since California's oil production peaked in 1985 (California Department of Conservation 2005). In 1985, King County produced over 2 million barrels per year (California Dept of Conservation, Division of Oil, Gas, and Geothermal Resources, 2010).

**b. Energy Consumption and Sources.** Total energy consumption in the United States in 2011 is estimated at approximately 97.3 quadrillion ( $10^{15}$ ) British thermal units (BTUs) (Energy Information Administration, Annual Energy Review [AER], 2012). Petroleum provides



approximately 36% of the energy used in the United States (AER, 2012). Coal provides approximately 20% and natural gas provides approximately 26% of the energy used, and nuclear and total renewable sources supply the rest in roughly equal proportions. On a per capita basis, California is ranked fourth lowest of the states in terms of energy use (209.6 million [10<sup>6</sup>] BTU per person), or about 34% less than the United States' average per capita consumption of 315.9 million BTU per person (AER, 2012).

Most of the energy generated in California is from coal and natural gas. Natural gas provides approximately 46% of the state's generated energy, and coal provides approximately 18%. The remaining 36% of state energy generation is from a variety of energy resources, including nuclear, hydropower, and other renewable energy sources (California Energy Commission, 2009 Integrated Energy Policy Report). While in-state generation resources provide the majority of California's power, California is part of a larger system that includes all of western North America. In 2011, California produced 70% of the electricity it uses and the rest was imported from outside the country. In 2011, California used 272,645 million kilowatt hours (kWh) of electricity (California Energy Commission, Electricity and Natural Gas Division website, 2013). Kings County consumed approximately 6,933 Mcf of natural gas (converted from 69 million therms) in 2012 from both residential and non-residential use. Kings County also consumed approximately 1,725 million kWh of electricity in 2012 from both residential and non-residential use. The projected annual electricity and natural gas consumption rates for the years 2020, 2030, 2035, and 2040 are shown in Table 4.5-1.

**Table 4.5-1  
 Kings County Annual Energy and Natural Gas Consumption Projections <sup>1</sup>**

Year	2012	2020	2030	2035	2040
<b>Population</b>	151,774	176,647	205,627	219,714	235,129
<b>Electricity (million kWh)</b>	1,725	2,008	2,337	2,497	2,672
<b>Natural Gas (Mcf)</b>	6,933	8,069	9,393	10,036	10,741

*1: The annual energy and natural gas consumption totals for Kings County for 2020-2040 are derived from 2012 per capita consumption rates. The 2012 population for Kings County was based upon the California Department of Finance County/State Population and Housing Estimates (Report E-5), January 2012. The 2020, 2030, 2035, and 2040 projected Kings County population was based on the California Department of Finance New Population Projections (Report P-1), January 31, 2013. The 2012 per capita electricity consumption rate was 11,366 kWh/capita, and the 2012 per capita natural gas consumption rate was 0.046 Mcf/capita.*

Regardless of the rate of production of oil and gas resources around the world, increasing attention has been paid to the need for reducing consumption of these resources. There are two utility companies which serve Kings County: Southern California Edison and Pacific Gas & Electric. The California Public Utilities Commission is involved in energy conservation programs.

Petroleum. Petroleum-based fuels are used for 96% of the State's transportation activity. Most gasoline and diesel fuel sold in California for motor vehicles is refined in California to meet state-specific formulations required by the California Environmental Protection Agency's Air Resources Board (CARB). Major petroleum refineries in California are concentrated in three counties: Contra Costa, Kern, and Los Angeles (California Energy Commission, Petroleum Statistics & Data website, accessed January 22, 2013).



In 2010, Californians consumed over 18 billion gallons of gasoline and diesel fuel on the State’s roadways (California Energy Commission, Fuels & Transportation Division website, accessed January 22, 2013).

Approximately 2,089,000 vehicle miles were traveled each weekday in Kings County in 2005, and approximately 2,188,000 vehicle miles were traveled each weekday in Kings County in 2013 (an increase of approximately 0.6% from 2005). This equates to approximately 754.9 million vehicle miles per year in 2013. Note that these VMT exclude external VMT (trips that pass through the County, but do not originate from or travel to a destination within the County).

Approximately 91.7 million gallons of gasoline and diesel fuel were consumed in the County during 2007 (Caltrans Division of Transportation System Information, 2008), which is approximately 251,232 gallons per day or 1.68 gallons per person per day (based on a 2007 countywide population of 148,933 persons [California Department of Finance Report E-4, November 2012]). Approximately 64.4 million gallons of gasoline and approximately 27.4 million gallons of diesel fuel were consumed in the County during 2007. Extrapolating this information, using the estimated annual growth rate in vehicle miles traveled (VMT) of 0.6% between 2005 and 2013, approximately 66.7 million gallons of gasoline and 28.4 million gallons of diesel fuel were consumed in the County in the baseline year (2013). This equates to approximately 77,808 gallons of gasoline per day or 0.51 gallons of gasoline per person per day (based on a 2013 countywide population of 151,127 persons [California Department of Finance Report E-1, May 2014]).

One gallon of gasoline is equivalent to approximately 114,000 British thermal units (BTUs), while one gallon of diesel is equivalent to approximately 138,700 BTUs (U.S. Environmental Protection Agency [EPA], August 1995; U.S. EIA, June 2012). Therefore, approximately 31.6 billion BTUs were consumed per day in 2012 (see Table 4.5-2).

**Table 4.5-2  
Annual Gasoline, Diesel and Energy Consumption in Kings County**

	<b>2007 Annual Fuel Use (million gallons)</b>	<b>2013 Annual Fuel Use (million gallons)</b>	<b>2007 Daily Energy Use (Billion BTUs)</b>	<b>2013 Daily Energy Use (Billion BTUs)</b>
Gasoline	64.4	66.7	20.1	20.8
Diesel	27.4	28.4	10.4	10.8
<b>Total</b>	<b>91.8</b>	<b>95.0</b>	<b>30.5</b>	<b>31.6</b>

*Note: One gallon of gasoline is roughly equivalent to 114,000 British thermal units (BTUs), while one gallon of diesel is roughly equivalent to 138,700 BTUs (U.S. Environmental Protection Agency [EPA], August 1995; U.S. EIA, June 2012).*

Natural Gas. In 2008, California received 46% of its natural gas supply from basins located in the Southwest, 19% from Canada, 22% from the Rocky Mountains, and 13% from basins located within California (California Public Utilities Commission website, accessed March 24, 2013). Once the gas arrives in California, it is distributed by three major gas utilities – San Diego Gas & Electric, Southern California Gas Company, and Pacific Gas & Electric – that provide a collective total of 98% of the State’s natural gas (California Energy Commission, Natural Gas Data and Statistics website, accessed January 22, 2013).



### Alternative Fuels.

*Hydrogen* is being explored for use in combustion engines and fuel cell electric vehicles. The interest in hydrogen as an alternative transportation fuel stems from its clean-burning qualities, its potential for domestic production, and the fuel cell vehicle's potential for high efficiency (two to three times more efficient than gasoline vehicles). Currently, nine hydrogen refueling stations are located in California; however, none are located in Kings County (U.S. Department of Energy [DOE], "Hydrogen Basics," 2013).

*Biodiesel* is a renewable alternative fuel that can be manufactured from vegetable oils, animal fats, or recycled restaurant greases. Biodiesel is biodegradable and cleaner-burning than petroleum-based diesel fuel. Biodiesel can run in any diesel engine generally without alterations, but fueling stations have been slow to make it available. There are currently fifty biodiesel refueling stations located in California, however, none are located in Kings County. (DOE, "Biodiesel," 2013).

*Electricity* can be used to power electric and plug-in hybrid electric vehicles directly from the power grid. Electricity used to power vehicles is generally provided by the electricity grid and stored in the vehicle's batteries. Fuel cells are being explored as a way to use electricity generated on board the vehicle to power electric motors. Unlike batteries, fuel cells convert chemical energy from hydrogen into electricity. There are no existing electric vehicle charging stations in Kings County (DOE, "Electricity Fuel Basics," 2013).

**c. Energy and Fuel Efficiency.** Petroleum-based fuels are currently used for 96% of the State's transportation needs (California Energy Commission, Natural Gas Data and Statistics, 2013). Though the demand for gasoline and diesel fuel is rising because of population growth and limited mass transit, the increase in demand can be partially offset by efficiency improvements. Land use policies that encourage infill and growth near transit centers (e.g. Senate Bill 375), improve fuel efficiency, and replacement of older less fuel-efficient cars with new cars with improved fuel economy will all serve to reduce fuel uses. In the future, increasing gasoline prices may apply downward pressure to gasoline demand in the state.

**d. Regulatory Setting.** Programs and policies at the state and national levels have emerged to bolster the previous trend towards energy efficiency, as discussed below. Former President Bush adopted the *National Energy Policy Act of 1992* and Former Governor Wilson of California approved the *1992-1993 California Energy Plan*, prepared by the California Energy Commission. Both call for increased efficiency and encourage alternative fuels.

The *National Energy Policy Act of 1992* calls for programs that promote efficiency and the use of alternative fuels. The *1992-1993 California Energy Plan* emphasizes a "portfolio" approach to energy planning, including development of a diverse energy base. Effective improvements in efficiency and development of new fuels and technologies comprise the heart of the state's plan (California Energy Action Plan Update, February 2008).

The California Energy Commission encourages local jurisdictions to prepare and adopt an Energy Element to their General Plans. Energy Elements assume an essential role by shaping and refining broader-based state and federal policies to fit local needs.



### Federal Regulations.

*Energy Policy Conservation Act (EPCA) and CAFE Standards.* The EPCA of 1975 established nationwide fuel economy standards in order to conserve oil. Pursuant to this Act, the National Highway Traffic and Safety Administration, part of the U.S. Department of Transportation, is responsible for revising existing fuel economy standards and establishing new vehicle fuel economy standards.

The Corporate Average Fuel Economy (CAFE) program was established to determine vehicle manufacturer compliance with the government's fuel economy standards. Compliance with CAFE standards is determined based on each manufacturer's average fuel economy for the portion of their vehicles produced for sale in the United States.

*National Energy Policy Act of 1992 (EPACT92).* EPACT92 calls for programs that promote efficiency and the use of alternative fuels. EPACT92 requires certain federal, state, and local government and private fleets to purchase a percentage of light duty alternative fuel vehicles (AFVs) capable of running on alternative fuels each year. In addition, EPACT92 has financial incentives. Federal tax deductions will be allowed for businesses and individuals to cover the incremental cost of AFVs. States are also required by the act to consider a variety of incentive programs to help promote AFVs.

*Energy Independence and Security Act of 2007 (EISA).* EISA is designed to improve vehicle fuel economy and help reduce U.S. dependence on oil. It expands the production of renewable fuels, reducing dependence on oil, and confronting global climate change. Specifically, it:

- Increases the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard (RFS) requiring fuel producers to use at least 36 billion gallons of biofuel in 2022, which represents a nearly five-fold increase over current levels; and
- Reduces U.S. demand for oil by setting a national fuel economy standard of 35 miles per gallon by 2020 – an increase in fuel economy standards of 40%.

### State Regulations.

*Senate Bill 1078: California Renewables Portfolio Standard Program.* Senate Bill (SB) 1078 (Chapter 516, Statutes of 2002), and as expanded under SB 2, establishes a renewable portfolio standard (RPS) for electricity supply. The RPS requires that retail sellers of electricity, including investor-owned utilities and community choice aggregators, provide 20% of their supply from renewable sources by 2017. SB 2 expanded this law and required procurement from eligible renewable energy resources to 33% by 2020. In addition, electricity providers subject to the RPS must increase their renewable share by at least one percent each year. The outcomes of this legislation will impact regional transportation powered by electricity.

*Other.* The California Energy Commission encourages local jurisdictions to prepare and adopt an Energy Element to their General Plans. Energy Elements assume an essential role by shaping and refining broader-based State and federal policies to fit local needs.



### Local Regulations.

*Draft Regional Climate Action Plan.* A draft Regional Climate Action Plan (CAP) has been prepared for KCAG. If adopted, the CAP would serve as a guiding document for County actions to reduce GHG emissions and adapt to the potential effects of climate change. The CAP is an implementation measure of the Kings County 2035 General Plan. Implementation Measures are provided to help ensure that appropriate actions are taken to implement the General Plan (Draft Regional Climate Action Plan, March 2014).

*Kings County 2035 General Plan.* The Kings County 2035 General Plan Circulation Element includes goals and policies that promote transportation systems, including public transit, bicycle, and pedestrian systems that would minimize motor vehicle emissions and traffic congestion (Kings County 2035 General Plan Circulation Element, January 2010). Applicable goals and policies in the Circulation Element include:

- **C Policy A1.2.1** – *Coordinate land use planning with planned transportation facilities to make efficient use of the transportation system and reduce total vehicle miles traveled, vehicle emissions, and energy use through improved accessibility to schools, job centers, and commercial services.*
- **C Policy A1.2.5** – *Purchase, where feasible, hybrid gasoline/electric or electric cars and trucks for the County fleet.*
- **C Goal C1** – *Integrate through the County’s regional transportation system, an efficient and coordinated goods and people moving network of Highways, Railroads, Public Transit, and Non-Motorized options that reduce overall fuel consumption and associated air emissions.*
- **C Policy C1.3.3:** – *Encourage and support the enhancement and marketing of transit and vanpool services as a viable transportation alternative and transportation control measure to improve air quality.*

## 4.5.2 Impact Analysis

**a. Methodology and Significance Thresholds.** CEQA sets forth a legal framework for identifying significant effects on the environment caused by discretionary actions taken by state and local governments that qualify as a “project.”

Appendix F includes “a list of energy impact possibilities and potential conservation measures designed to assist in the preparation of an EIR” (CEQA Guidelines, App. F, § II.) The list included in Appendix F represents “[e]xamples of energy conservation measures[.]” (CEQA Guidelines, § 15126.4, subd. (a)(1)(C).) In drafting the Appendix F list, the California Natural Resources Agency explained that “specific items [on the list] may not apply” to all projects (CEQA Guidelines, App. F, § II.)

The 2014 RTP-SCS PEIR is a Program EIR, not a project-level EIR. Use of Appendix F, and the discussion of energy impacts in this document, reflect the programmatic purpose behind the 2014 RTP-SCS PEIR. In Appendix F, energy conservation is described in terms of decreased per capita energy consumption, decreased reliance on natural gas and oil, and increased reliance on renewable energy sources (CEQA Guidelines, App. F, § I.). KCAG considered the guidance provided in Appendix F both in analyzing the program’s energy impacts and in developing mitigation measures to further reduce its impacts. The significance thresholds for the 2014 RTP-



SCS PEIR were formulated in consideration of these factors. For the purposes of this analysis, a potential impact would occur if the project involved inefficient, wasteful and unnecessary consumption of energy.

For this analysis, the calculation of total energy consumption follows the Input-Output methodology suggested by Caltrans (Caltrans Division of Engineering Services, Office of Transportation Laboratory, Energy and Transportation Systems, July 1983). It should be noted that the Caltrans methodology provides for the calculation of the *cumulative* energy consumption. Not only does the methodology include energy consumption that would be due solely to the construction of 2014 RTP-SCS projects, it also includes energy consumption that is not due to the 2014 RTP-SCS, but rather is due to socioeconomic growth (e.g., population and employment), land use policies, and the existing transportation infrastructure.

Energy consumption from transportation projects is categorized in terms of “direct” and “indirect” energy. Direct energy is the fuel that propels vehicles – it is consumed directly by the automobile, bus, or transit vehicle. Indirect energy is all the remaining energy needed to construct, operate, and maintain the roadway and rail system and manufacture and maintain the vehicles using the roadway and rail system (Caltrans 1983). Indirect energy accounts for construction-related energy (e.g., the energy required to construct transportation improvements), which is anticipated to be consumed through the life of the plan as several transportation improvement projects may be undertaken concurrently, and is therefore characterized as a long-term, operational energy use. Indirect energy also accounts for the maintenance of a roadway over the life of a project, which is also considered a long-term, operational energy use.

Direct Energy Consumption. Direct energy is that energy used in the daily operation of the transportation system, including the propulsion of passenger vehicles (automobiles, vans, and trucks) and transit vehicles, including buses and trains. The direct energy analysis for the project is based on baseline, 2020, 2035, and 2040 VMT with and without the 2014 RTP-SCS (as analyzed in Section 4.12, *Transportation and Circulation*). In addition, VMT and associated energy consumption during interim years (2020 and 2035) with the plan are also presented.

Kings County’s 2013 fuel consumption was extrapolated from the 2007 fuel consumption using an annual growth rate of 0.6%, which was the annual growth rate in VMTs between 2005 and 2013. The 2013 fuel consumption was converted to BTUs and then divided by daily VMT (refer to Table 4.5-2) to derive a regional BTU/VMT conversion factor of 14,612 BTUs per VMT.

It should be noted that the BTU/VMT factor was slightly higher in previous years and is forecast to continue to decrease into the future as a result of improved fuel economy, particularly if the fleet-wide goal of 35 mpg by year 2020 proposed under the Energy Independence and Security Act is met. Applying the 2013-based factor to future year (2020, 2035, and 2040) VMT therefore provides a reasonable worst case evaluation of energy consumption as the energy efficiency of vehicles in 2040 is anticipated to be higher than current fuel efficiency of vehicles.

Indirect Energy Consumption. Indirect energy is the energy required to construct, operate, and maintain the transportation network, as well as to manufacture and maintain on-



road vehicles and transit vehicles. Therefore, construction-related impacts associated with the 2014 RTP-SCS are included in the indirect energy analysis. The indirect energy analysis was conducted using the Input-Output methodology developed by Caltrans (1983). This method converts VMT, lanes-miles, or construction dollars into energy consumption based on data from other transportation projects in the United States. Table 4.5-3 shows the indirect energy consumption factors used in this analysis. It should be noted that indirect energy consumption due to production of fuel and transportation/transmission to the end users is not included in this analysis, as any such analysis would be speculative.

**Table 4.5-3  
Indirect Energy Consumption Factors**

Mode	Factor
<b>Manufacturing</b>	
Passenger Vehicles	1,410 BTU/VMT
Transit Buses	3,470 BTU/VMT
Roadway (construction)	27,300 BTU/1977\$
Rail (construction)	2,108 BTU/VMT
<b>Maintenance</b>	
Passenger Vehicles	1,400 BTU/VMT
Transit Buses	13,142 BUT/VMT
Rail	7,060 BTU/VMT

*2013 dollars converted to 1977 dollars as a reasonable worst-case inflation assumption using United States Department of Labor and Statistics inflation converter. Note that transportation projects with construction costs planned further in the future would result in lower energy use relative to construction cost, due to anticipated additional future inflation.*

**b. Project Impacts and Mitigation Measures.** This section describes generalized impacts associated with some of the projects anticipated under the 2014 RTP-SCS.

**Impact E-1** ~~Future transportation improvement projects and implementation of the land use scenario~~ envisioned by the 2014 RTP-SCS would increase demand for energy beyond existing conditions. However, the 2014 RTP-SCS would result in lower VMT and consume less energy than the No Project scenario. The project would not increase energy use relative to future no project conditions, would not result in inefficient, wasteful, or unnecessary us of energy, and would be consistent with adopted plans and policies related to energy conservation. As such, this impact would be Class III, *less than significant*.

Daily operation of the County’s transportation system uses energy in the form of fuel consumed by propulsion of passenger vehicles (automobiles, vans, and trucks) and transit vehicles (buses and trains). Some highway and roadway improvements included in the RTP will increase vehicle capacity, allowing a greater number of vehicles to use County facilities. However, increasing capacity and improving roadways and intersections does not necessarily result in an increase in motor vehicle trips. Increases in motor vehicle trips are primarily a combined function of population growth and employment growth. It should be noted that population growth and growth in VMT would occur within the County regardless of whether the 2014 RTP-SCS is implemented. As a result, energy consumption as it relates to vehicles would increase beyond the 2013 baseline in any scenario. The 2014 RTP-SCS would help to minimize



energy consumption by improving the overall efficiency of the transportation system. In addition, many 2014 RTP-SCS projects (e.g., bikeway and pedestrian projects, and transit projects), ~~as well as the envisioned land use pattern,~~ would improve the availability of alternative transportation modes, help reduce congestion, and resultant harmful air quality emissions in the County. Generally, the availability of these alternative modes would be expected to reduce overall motor vehicular trips, vehicle miles traveled, and associated energy consumption.

Construction and maintenance of the proposed RTP-SCS projects (including construction and maintenance of roadways) would result in short-term consumption of energy resulting from the use of construction equipment and processes. During construction activities, energy would be needed to operate construction equipment. In addition, roadway and transit construction materials, such as asphalt, concrete, surface treatments, steel, rail ballast, as well as building materials, require energy to be produced, and would likely be used in projects that involve new construction or replacement of older materials, ~~as well as construction of future infill projects envisioned by the 2014 RTP-SCS.~~ The California Green Building Standards Code (CALGreen Code) includes specific requirements related to recycling, construction materials, and energy efficiency standards, which would apply to construction of roadway and transit improvement projects, ~~as well as compact development patterns envisioned by the 2014 RTP-SCS and help to minimize waste and energy consumption.~~ All construction and maintenance conducted pursuant to the 2014 RTP-SCS, or as a result of improvements made by the 2014 RTP-SCS, would be required to comply with the CALGreen Code.

Table 4.5-4 shows the VMT and total direct and indirect energy use (BTUs) in the County under existing/base year (2013) conditions and under the 2020 with the 2014 RTP-SCS, 2035 with the 2014 RTP-SCS, 2040 with the 2014 RTP-SCS, and 2040 No Project scenarios.

**Table 4.5-4  
Direct and Indirect Transportation Energy Use**

Scenario	Analysis Year	Region-Wide Weekday VMT (thousands)	Direct Energy Use (Daily Billion BTUs)	Indirect Energy Use (Daily Billion BTUs)	Total Energy Use (Daily Billion BTUs)	Energy Use per Capita (Daily BTUs)
EIR Base Year	2013	2,188,000	<del>32.031.97</del>	<del>21.05.20</del>	<del>53.037.17</del>	<del>350,532,245,980</del>
RTP-SCS Interim Year	2020	2,454,000	35.92	22.25.69	58.141.61	329,087,235,552
RTP-SCS Interim Year	2035	2,832,000	41.438	27.36.49	68.747.87	342,579,217,874
RTP-SCS Horizon Year	2040	2,982,000	43.658	29.16.83	72.650.41	308,907,214,387
RTP-SCS (No Project)	2040	2,984,000	43.60	29.56.84	73.150.44	311,041,214,525

*These VMT exclude external VMT (trips that pass through the County, but do not originate from or travel to a destination within the County).*



As shown in Table 4.5-4, total energy use would increase over time due to regional socioeconomic (population and employment) growth. However, the 2014 RTP-SCS would result in reduced VMT and direct and indirect energy use as compared to the No Project scenario for the horizon year (2040). A decrease in VMT under the RTP-SCS would result in decreased fuel consumption. In 2040, the 2014 RTP-SCS would result in a 0.706% reduction in total energy usage when compared to the No Project scenario.

For the purposes of this analysis, a potential impact would occur if the project involved inefficient, wasteful, and unnecessary consumption of energy. As discussed above, the RTP-SCS would result in a decrease in total energy usage when compared to the baseline without the RTP-SCS. As described in the *Methodology and Significance Thresholds* section, direct energy usage is energy used in the daily operation of the transportation system (e.g., consumption of fuel). The reduced VMT under the 2014 RTP-SCS would directly result in reduced County-wide fuel consumption, as well as better freeway and roadway levels of service than the No Project scenario. The transportation improvements proposed under the 2014 RTP-SCS would result in a more efficient transit system. The 2014 RTP-SCS also would result in greater availability of public transit and other alternative modes of transportation, as well as the land use scenario envisioned by the 2014 RTP-SCS. The reduction in overall congestion resulting from these service level improvements would reduce fuel consumption and promote fuel efficiency beyond what is accounted for in the above analysis. In addition, improvements to state fuel efficiency standards for vehicles and state mandated increases in the supply and use of alternative transportation fuels would further reduce fuel consumption, such as implementation of electric vehicle charging station plan. Therefore, the RTP-SCS would not result in inefficient, unnecessary, or wasteful consumption of gasoline or diesel fuel.

~~The RTP-SCS envisions a regional land use scenario that promotes compact development. The compact development patterns in the SCS would reduce VMT and energy use because it would locate people closer to existing goods and services, thereby resulting in shorter vehicle trips and/or promoting walking or biking, and they would locate people closer to existing transportation hubs, thereby encouraging the use of alternative modes of transit (e.g., buses) and resulting in fewer vehicle trips. Operation of future development projects would increase overall demand for energy beyond existing demand; however, such development would not require unusual, unnecessary, or wasteful amounts of energy. Future compact development projects are anticipated to be constructed using standard building practices. These projects would also be subject to the CALGreen Code and Title 24 of the California Energy Code, which set forth specific energy efficiency requirements related to design, construction methods and materials.~~

As described in the *Methodology and Significance Thresholds* section, indirect energy is the energy required to construct, operate, and maintain the transportation network, including roadways and rail lines. Indirect energy reductions under the 2014 RTP-SCS are similarly a result of reduced VMT under the 2014 RTP-SCS scenario. As vehicles drive fewer miles, less wear and tear occurs on roadways, thereby requiring less maintenance and associated energy consumption. The indirect energy use totals shown in Table 4.5-4 account for construction and maintenance of roadways and rail lines. Transportation projects implemented under the 2014 RTP-SCS would result in indirect energy use due to construction of planned and programmed projects. Nevertheless, due to the reduction in VMT attributed to the 2014 RTP-SCS and the

associated reduction in indirect energy use, the 2014 RTP-SCS would result in lower indirect energy use compared to the No Project scenario, and would not require unusual, unnecessary, or wasteful amounts of energy.

New transportation facilities that require energy for operation, such as signal lighting, roadway or parking lot lighting, and electronic equipment will increase energy demand. New landscaping irrigation also increases energy demand through water pumping and treatment. However, the RTP-SCS would result in a net decrease in energy use in the region, and energy consumption is not anticipated to be unnecessary or wasteful, as all lighting, signage, and irrigation systems would comply with applicable energy efficiency requirements of the California Building Code.

Consistency with Energy Conservation Policies. As discussed above, the 2014 RTP-SCS would result in fewer long-term VMT (and thus less energy consumption) when compared with the No Project scenario, and therefore would result in an overall energy savings. Accordingly, inconsistencies between the 2014 RTP-SCS and adopted plans and policies related to energy conservation have not been identified. The discussion below further examines consistency with adopted plans and policies related to energy conservation.

KCAG monitors regulations related to fuel efficiency standards and alternative fuel vehicles. The 2014 RTP-SCS would not conflict with such regulations (e.g., *Energy Policy and Conservation Act* and *CAFE Standards, EPAct, Energy Independence and Security Act of 2007, AB 1493: Reduction of Greenhouse Gas Emissions, AB 1007: State Alternative Fuels Plan*). *AB 2076: Reducing Dependence on Petroleum* addresses alternative fuels and motor vehicle efficiency as well, but also addresses reducing VMT. As shown, the 2014 RTP-SCS would reduce total VMT as compared to future No Project conditions. Thus the proposed RTP-SCS is consistent with California Assembly Bill 2076.

The 1975 *Warren-Alquist Act* established the California Energy Resource Conservation and Development Commission, now known as the California Energy Commission (CEC), and established a State policy to reduce wasteful, uneconomical, and unnecessary uses of energy. Based on the data above, and explained in the conclusion below, the 2014 RTP-SCS would not result in wasteful, inefficient, or unnecessary usage of energy. Therefore the 2014 RTP-SCS is consistent with the *Warren-Alquist Act*.

SB 1078 as accelerated by Executive Order S014-08, establishes a renewable portfolio standard for electricity supply, and requires that retail sellers of electricity, including investor-owned utilities and community choice aggregators, provide 33% of their supply from renewable sources by 2020. In addition, the California Energy Action Plan (most recently updated in February 2008) includes a set of strategies to address California's future energy needs, including policy areas such as climate change, transportation-related energy issues, and research and development activities. The proposed 2014 RTP-SCS would not conflict with these policies. Refer to Section 4.8, *Greenhouse Gas Emissions/Climate Change*, for a discussion of GHG emissions reductions related to the proposed 2014 RTP-SCS.

As discussed in Section 2.0, *Project Description*, consistent with the requirements of SB 375, KCAG has the responsibility to prepare a Sustainable Communities Strategy (SCS) as part of the



RTP. SB 375 requires each MPO to demonstrate, through the development of an SCS, how its region will integrate transportation, housing, and land use planning to meet the GHG reduction targets set by the State. In addition to creating requirements for MPOs, it also creates requirements for the California Transportation Commission (CTC) and the California Air Resources Board (ARB). Some of the requirements include the following:

- *The California Transportation Commission (CTC) must maintain guidelines for the travel demand models MPOs develop for use in the preparation of their RTPs.*
- *California Air Resources Board (CARB) must develop regional GHG emission reduction targets for automobiles and light trucks for 2020 and 2035 by September 30, 2010.*
- *Each MPO must prepare an SCS as part of its RTP to demonstrate how it will meet the regional GHG targets.*
- *Each MPO must adopt a public participation plan for development of the SCS that includes informational meetings, workshops, public hearings, consultation, and other outreach efforts.*
- *If an SCS cannot achieve the regional GHG target, the MPO must prepare an Alternative Planning Strategy (APS) showing how it would achieve the targets with alternative development patterns, infrastructure, or transportation measures and policies.*
- *Each MPO must prepare and circulate a draft SCS at least 55 days before it adopts a final RTP.*
- *After adoption, each MPO must submit its SCS to the ARB for review.*
- *ARB must review each SCS to determine whether or not, if implemented, it would meet the GHG targets. ARB must complete its review within 60 days.*

The proposed RTP-SCS complies with these requirements and therefore would not conflict with the *CTC Guidelines*.

SB 375 directed CARB to establish regional on-road GHG per capita emissions reduction targets from light-duty trucks and passenger vehicles for 2020 and 2035. As discussed in Section 2.0, *Project Description*, as mandated by CARB, KCAG must reduce 2005 levels of per capita GHG emissions from passenger vehicles to meet the SB 375 target. For the KCAG region, the targets set by CARB are a 5% reduction from 2005 emissions levels by 2020 and a 10% reduction from 2005 emissions levels by 2035. As discussed in Section 4.8, *Greenhouse Gas Emissions/Climate Change*, implementation of the RTP-SCS would reduce per capita passenger vehicle GHG emissions below existing levels and the No Project scenario. Implementation of the RTP-SCS will help the region achieve its SB 375 and AB 32 GHG emissions reduction targets. Therefore, the 2014 RTP-SCS is consistent with the requirements of SB 375, as well as AB 32.

Locally, the proposed RTP-SCS would also be consistent with the Kings County 2035 General Plan Circulation Element's goals, objectives, and policies. The General Plan Circulation Element encourages efficient movement of people and goods as well as reduced vehicle emissions and associated greenhouse gases.

In addition, the proposed 2014 RTP-SCS includes guidelines, goals, and policies that would reduce long-term energy use from transportation within the project area. To meet requirements of SB 375, the SCS:

- *Identifies future land use patterns (consistent with the General Plan land use and zoning designations of the local agencies);*



- Identifies areas to accommodate long-term housing needs as well as 8-year housing needs;
- Considers resource areas and farmland;
- Identifies transportation needs and the planned transportation network; and
- Sets forth a future land use pattern (consistent with the General Plan land use and zoning designations of the local agencies) to meet GHG emissions reduction targets.

As discussed above, the 2014 RTP-SCS would result in lower future VMT and fuel consumption, and a decrease in total energy usage compared to conditions without the 2014 RTP-SCS. In addition, the 2014 RTP-SCS would not result in wasteful or inefficient energy consumption within the region, and is generally consistent with applicable policies regarding energy conservation. Therefore, the 2014 RTP-SCS would not have a significant impact on energy. Impacts would be less than significant.

Mitigation Measures. The 2014 RTP-SCS proposes many transportation projects that would provide greater opportunity for County residents and visitors to use alternatives to single occupancy vehicle trips for transportation and reduce the demand for energy used in transportation. The 2014 RTP-SCS also includes policies that encourage land use planning that encourages walking, biking, and transit use.

The following mitigation measures recommended by KCAG are not required to reduce energy impacts to less than significant. They are provided as measures that could be implemented to reduce energy consumption. Sponsor agencies should implement the following measures for applicable transportation projects to minimize energy impacts. Project-specific environmental impacts may require these measures be revised or expanded in response to site-specific conditions.

- E-1(a)**      New transportation facilities should be designed with energy-efficient equipment and passive solar design (~~e.g., orientation of building to maximize natural heating and cooling, solar water heating, use of daylighting, and placement of trees to aid passive cooling, protection from prevailing winds, and maximum year-round solar access~~), provided that additional capital costs are offset by estimated energy savings during the first 5 years of operation. Additional improvements with longer payback periods, such as photovoltaic solar electric systems, should be considered where applicable.
- E-1(b)**      All lighting should be energy efficient and designed to use the least amount of energy to serve the purpose of the lighting. Lighting should utilize solar energy wherever feasible.
- E-1(c)**      New landscaping design and irrigation systems for transportation projects should be water efficient.

Significance After Mitigation. Impacts would be less than significant without mitigation. Implementation of recommended measures would further reduce energy consumption in the region.



**Impact E-2**    **2014 RTP-SCS projects would not significantly impact the transportation of energy resources within the County. This impact would be Class III, less than significant.**

Transportation is an important component of energy production. As of 2012, Kings County contained 175 active oil wells (California Dept. of Conservation, Division of Oil, Gas & Geothermal Resources, 2012). Overland pipelines are a preferred environmental mode of transporting crude oil produced offshore and landed in the County for transport to refineries. Proposed projects and policies in the 2014 RTP-SCS will not affect pipeline transport of crude oil; however, oil and by-products of oil and gas development are also transported through the County on regional highways.

Natural Gas Liquids (NGLs) are byproducts of oil and gas production and are commonly transported by truck or rail (National Petroleum Council, 2011). NGLs burn hotter than methane because they have a higher energy content. As a result, even small quantities of NGLs in a natural gas flow can result in a larger impact on the overall energy contained in the natural gas (Independent Natural Gas Information Site, accessed November 15, 2013; Santa Barbara County Energy Division website, NGL Transportation, January 2013). Transporting NGLs has been identified as the highest risk to public safety associated with oil and gas development. This high ranking largely stems from the risk of transporting these products via highway, through populated areas, combined with heightened probability of human error. Truck transportation safety is a consideration in the design of all highway and roadway construction, and all transportation improvements pursuant to the RTP-SCS would comply with federal, state, and local regulations that govern transportation safety; therefore, this impact would be less than significant.

Mitigation Measures. None required.

Significance After Mitigation. Impacts would be less than significant.

**c. Specific RTP Projects That May Result in Impacts.** As discussed, the 2014 RTP-SCS would result in less than significant impacts related to energy consumption. No specific projects have been identified that would result in significant consumption of energy. Rather, the proposed transportation improvements and land use scenario envisioned by the 2014 RTP-SCS would result in less energy demand than the No Project scenario.

## 4.6 ENVIRONMENTAL JUSTICE

### 4.6.1 Setting

**a. Overview.** Environmental Justice was first addressed at the federal level, with the publication of Executive Order 12898 *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, which became effective on February 11, 1994. The Executive Order directs every federal agency to make environmental justice part of its mission by identifying and addressing the effects of all programs, policies, and activities on minority and low-income populations. Subsequent guidance for implementing Executive Order 12898 was issued by the Council on Environmental Quality (CEQ) on December 10, 1997. The key principals in the CEQ guidance are to:

- Ensure full and fair participation by all potentially affected communities in the transportation decision-making process; and
- Define low-income and minority populations and when significant concentrations of these populations constitute environmental justice populations.
- Avoid, minimize, or mitigate disproportionately high and adverse human health or environmental effects on environmental justice populations.

For transportation, both the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) have established policies for integrating environmental justice principles into existing operations. These policies focus on determining whether proposed transportation improvements disproportionately affect environmental justice populations or reduce or delay the receipt of benefits of the transportations improvements.

Environmental justice is defined in the California Government Code as “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” (Government Code Section 65040.12 (e)). In May 2012, the California Attorney General’s office released a report titled “Environmental Justice at the Local and Regional Level – Legal Background,” which interprets the California Environmental Quality Act (CEQA) to include considerations of environmental justice, although environmental justice is not explicitly mentioned in the CEQA guidelines. The report defines “fairness” in this context to mean that “the benefits of a healthy environment should be available to everyone, and the burdens of pollution should not be focused on sensitive populations or on communities that already are experiencing its adverse effects.”

Issues of environmental justice impact low-income populations and minority populations. Environmental justice issues include concerns related to human health and safety; economic development, society and culture; accessibility and the natural environment. Collectively, these populations are defined as Environmental Justice Communities and are defined in greater detail below.

**b. Demographics.** Tables 4.6-1 and 4.6-2 summarize 2010 demographic information for the Kings County Association of Governments (KCAG) region. Within the KCAG region, cities or census designated places are collectively analyzed as communities for purposes of this





analysis. Environmental Justice Communities were identified through analysis of demographic and socioeconomic data for minority and low-income populations based on 2010 U.S. Census data and 2008-2012 American Community Survey data.

Race/Ethnicity. Table 4.6-1 shows the total population within the study area as well as the racial and ethnic composition of the cities and communities comprising the KCAG region as of 2010. Note that “Hispanic” is defined as an ethnicity while the others listed in Table 4.6-1 are races. To prevent double counting, persons whom identified themselves as Hispanic were excluded from racial population counts, but comprise a portion of the total minority population. Data for White and Minority populations comprise 100 percent of the KCAG population.

Approximately 78 percent of the County population is concentrated in the communities of Avenal (10 percent), Corcoran (17 percent), Hanford (35 percent), and Lemoore (16 percent). Armona, Home Gardens, Kettleman City, and Stratford collectively comprise 5 percent of the County population and the other unincorporated areas of Kings County comprise the remaining 17 percent of the population. As shown in Table 4.6-1, 64.8 percent of the residents, or 297,931 persons, of the unincorporated areas of Kings County were identified as being a minority race or ethnicity. Figure 4.6-1 shows the distribution of Census Blocks with minority populations greater than 50 percent. The largest minority group in the KCAG region is Hispanic (50.9 percent), followed by Black (6.7 percent). Collectively, Kings County contains substantial environmental justice populations, as defined by the CEQ, as minority groups comprise greater than 50 percent of the population within the county.

Low-Income. “Low-income” is defined a person whose median household income is at or below the Department of Health and Human Services poverty guidelines. Table 4.6-2 illustrates the median income, poverty rate and unemployment rate for the cities and communities within the KCAG region. For comparison purposes, in 2012 the State median income was \$61,400 and the median income for Kings County was \$48,761. In the KCAG region, Armona, Avenal, Corcoran, Home Gardens, Kettleman City, Stratford, and other unincorporated areas of the County all had median incomes lower than the County and State average. Avenal had the lowest median household income of \$27,927.

For comparison purposes, in 2012 the State poverty rate was 15.3 percent and the poverty rate for Kings County was 20.7 percent (American Community Survey, 2012). In the KCAG region, Armona, Avenal, Corcoran, Home Gardens, Kettleman City, and Stratford have higher poverty rates than the County and State average. Avenal had the highest poverty rate of 39.1 percent, nearly double the County average.

For comparison purposes, in 2012 the State of California unemployment rate was 11.0 percent and the Kings County unemployment rate was 12.7 percent (American Community Survey, 2012). Within the KCAG region, several cities and communities had unemployment rates higher than both the County and State average, including Armona, Avenal, Home Gardens, Kettleman City, Lemoore, Stratford, and the other County unincorporated areas. Home Gardens had the highest unemployment rate of 23.1 percent.



**Table 4.6-1  
Population, Race, and Ethnicity in the KCAG Region (2010)**

Location	Total Population	White		Black		American Indian		Asian		Pacific Islander		Other		Hispanic		Minority	
	People	People	%	People	%	People	%	People	%	People	%	People	%	People	%	People	%
California	37,253,956	14,956,253	40.1	2,163,804	5.8	162,250	0.4	4,775,070	12.8	128,577	0.3	1,054,283	2.8	14,013,719	37.6	22,297,703	59.9
Kings County	152,982	53,879	35.2	10,314	6.7	1,297	0.8	5,339	3.5	228	0.1	4,059	2.7	77,866	50.9	297,931	64.8
Armona	4,079	1,013	24.8	87	2.1	24	0.6	81	2.0	9	0.2	71	1.7	2,794	<b>68.5</b>	3,066	<b>75.2</b>
Avenal	15,505	2,387	15.4	1,540	<b>9.9</b>	82	0.5	102	0.7	4	0.0	260	1.7	11,130	<b>71.8</b>	13,118	<b>84.6</b>
Corcoran	25,203	4,832	19.2	3,632	<b>14.4</b>	137	0.5	180	0.7	11	0.0	511	2.0	15,900	<b>63.1</b>	20,371	<b>80.8</b>
Hanford	54,637	22,473	<b>41.1</b>	2,532	4.6	485	0.9	2,283	4.2	44	0.1	1,403	2.6	25,799	47.1	32,164	58.9
Home Gardens	1,445	181	12.5	197	<b>13.6</b>	33	<b>2.3</b>	48	3.3	0	0.0	29	2.0	961	<b>66.5</b>	1,264	<b>87.5</b>
Kettleman City	1,441	43	3.0	0	0.0	0	0.0	1	0.1	0	0.0	13	0.9	1,384	<b>96.0</b>	1,398	<b>97.0</b>
Lemoore	24,390	10,023	<b>41.1</b>	1,447	5.9	200	0.8	1,919	<b>7.9</b>	89	0.4	977	<b>4.0</b>	9,735	39.9	14,367	58.9
Stratford	1,282	174	13.6	11	0.9	2	0.2	16	1.2	0	0.0	5	0.4	1,074	<b>83.8</b>	1,108	<b>86.4</b>
U.A.	25,000	12,753	<b>51.0</b>	868	3.5	334	<b>1.3</b>	709	3.2	71	0.3	790	<b>3.2</b>	9,089	36.4	12,502	49.0

Notes: **Bold**=Higher than County Proportion, UA = Unincorporated City or community area  
Source: Block level data from U.S. Census 2010.

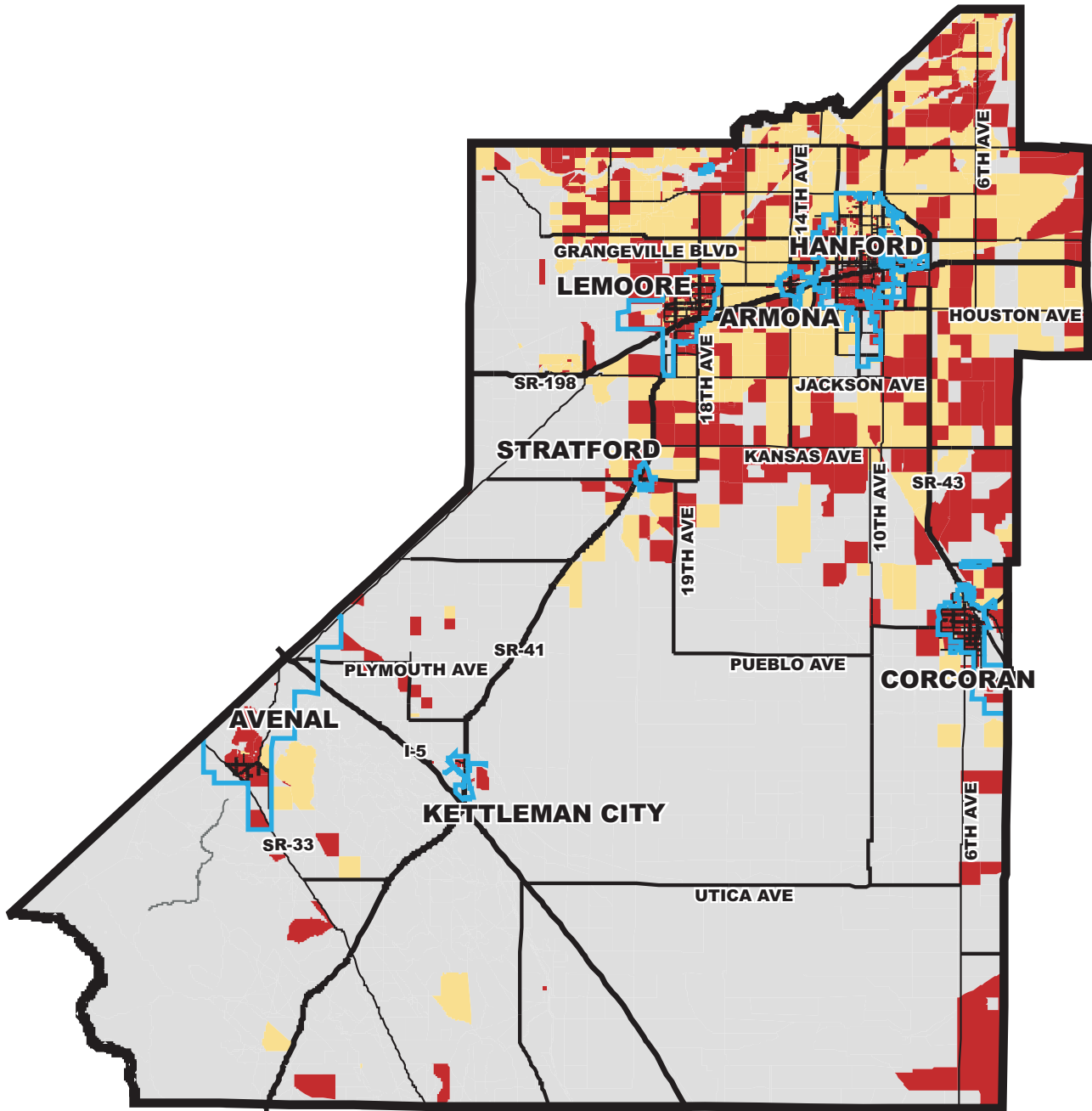
**Table 4.6-2  
Income and Poverty in the KCAG Region (2012)**

Location	Median Income	Poverty Rate		Unemployment	
	Household	Persons Below Poverty	%	Persons Unemployed	%
California	\$61,400	5,590,100	15.3	3,207,938	11.0
Kings County	\$48,761	27,679	20.7	14,548	12.7
Armona	<b>\$43,767</b>	1,194	<b>24.0</b>	687	<b>18.8</b>
Avenal	<b>\$27,927</b>	4,855	<b>39.1</b>	1,705	<b>15.5</b>
Corcoran	<b>\$32,498</b>	3,674	<b>27.0</b>	1,823	8.4
Hanford	\$57,724	9,324	16.9	4,897	11.8
Home Gardens	<b>\$32,347</b>	2,138	<b>34.1</b>	1,076	<b>23.1</b>
Kettleman City	<b>\$39,821</b>	1,172	<b>26.3</b>	508	<b>16.7</b>
Lemoore	\$53,390	4,379	15.6	2,752	<b>13.1</b>
Stratford	<b>\$39,821</b>	1,172	<b>26.3</b>	508	<b>16.7</b>
U.A.	<b>\$46,488</b>	943	10.5	1,098	<b>14.3</b>





Notes: **Bold**=Higher than County Proportion, UA = Unincorporated City or community area, Kettleman City and Stratford share the same Census Tract.

Source: Census tract level data from U.S. Census 2008-2012 5-Year American Community Survey.

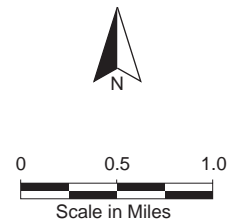




LEGEND:

-  Kings County Cities and Communities
-  Census Blocks with Minority Populations Greater than 50 Percent
-  Census Blocks with Minority Populations Less than 50 Percent
-  Census Blocks with no Residential Population

Source: U.S. Census, 2010, TAHA, 2014



Minority Blocks within Kings County

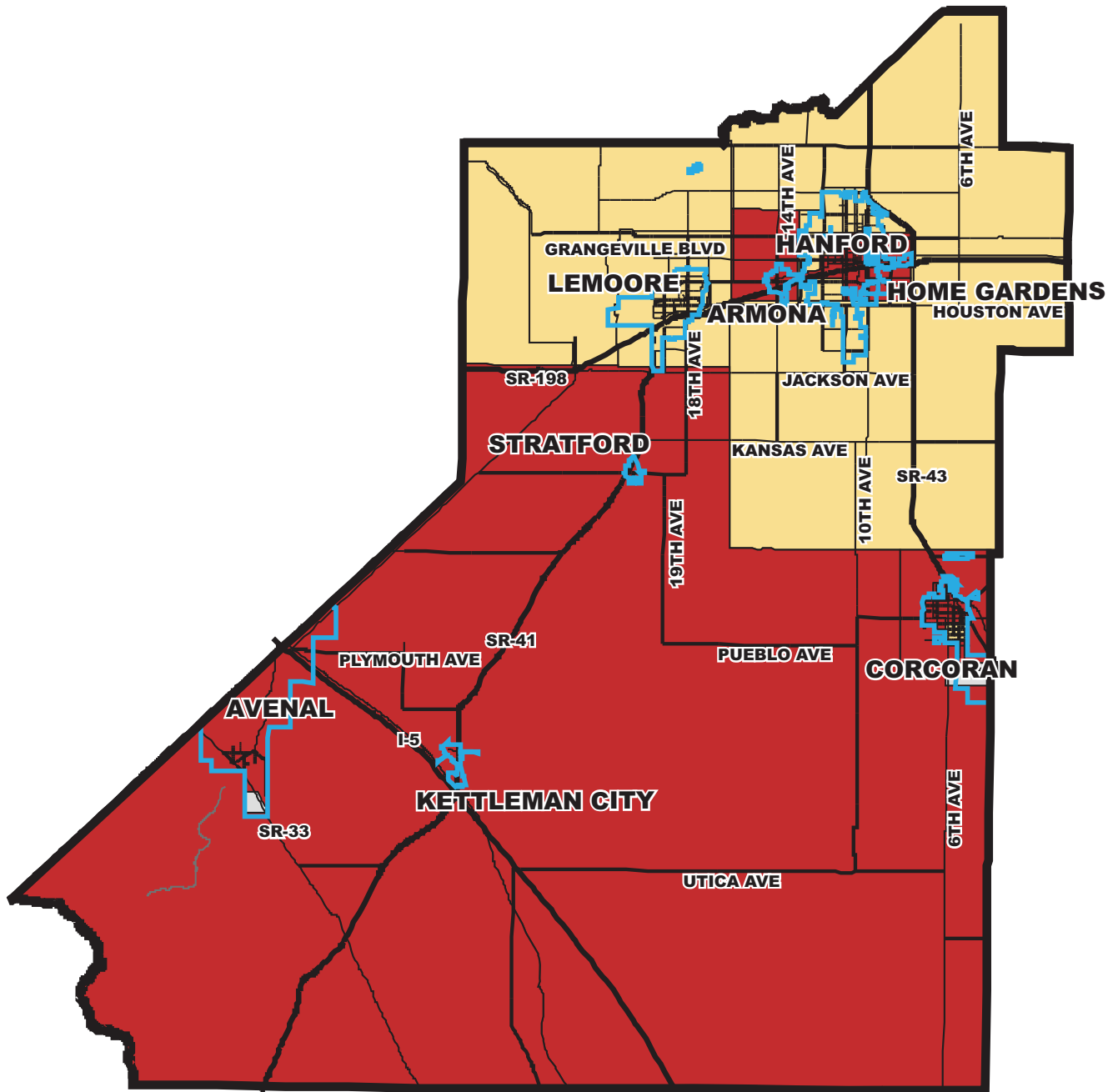
Figure 4.6-1

Concentrations of Minority and Low-Income Groups. The concentration of low-income and minority groups were determined by correlating data presented in Tables 4.6-1 and 4.6-2. The minority population groups of Kings County comprised 64.8 percent of the total population. The Kings County minority population is comprised of 50.9 percent Hispanic, 6.7 percent Black, 3.5 percent Asian, 2.7 percent Other ethnicity, 0.8 percent Native American, and 0.1 percent Pacific Islander. In Kings County, the median household income is \$48,761 and 20.7 percent of households are considered to be low-income. Figure 4.6-2 shows the distribution of Census Tracts with low-income populations greater than the County average.

Generally, within the KCAG region, areas with high concentrations of minority populations also have high concentrations of low-income populations. The only areas in the KCAG region that do not have either minority or low-income populations include the unincorporated areas of the County. All of the communities within Kings County have minority populations greater than 50 percent. Hanford and Lemoore are the two areas with percentages of low-income populations that are lower the County averages. For comparison purposes, these two communities also have the lowest minority percentages within the Kings County, although both are greater than 50 percent.

Mobility. Mobility refers to the movement of people via multiple modes, including individual cars, transit, walking, and cycling, among others. Mobility can be an important indicator of quality of life as mobility is correlated with accessibility which is the ease with which individuals can reach their destinations. Low-mobility populations are limited in their ability to access needed goods and services or the means by which they reach their destination are expensive or inconvenient. Auto-oriented cities and communities with few safe or reliable transportation alternatives are mobility-limiting as residents have few transportation options. Low-income populations may have restricted mobility, and may be transit dependent if they do not have access to a private vehicle. For purposes of this analysis, households are considered transit dependent if there are fewer than two vehicles per household.

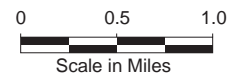
Concentrations of Low-Mobility Populations. Table 4.6-3 shows the transit-dependent populations within the Kings County communities, the distribution of transportation modes within the KCAG region, and the mean travel times to commute to work. Kings County has fewer transit-dependent populations, higher vehicle usage, lower transit and active transportation (walking/biking) usage, and shorter travel commuting times when compared to the California averages. All the communities within the KCAG region have roughly similar commuting patterns, with single-occupancy vehicles being the most common choice, followed by people who carpool, walk or bike, and take public transportation. Within the Kings County communities, Avenal and Home Gardens have substantially higher transit-dependent populations compared to the County and State averages. Avenal also has a substantially higher proportion of people who carpool (40 percent) compared to the County and State averages. The highest concentration of transit and active transportation is within the unincorporated areas of the County. The communities of Kettleman City and Stratford also have active transportation usage higher than the County and State averages.



LEGEND:

- Kings County Cities and Communities
- Census Tracts with Low-Income Populations Greater than County Average
- Census Tracts with Low-Income Populations Less than County Average
- Census Blocks with no Residential Population

Source: U.S. Census, 2010, TAHA 2014



Environmental Justice  
 Low-Income Populations

Figure 4.6-2

**Table 4.6-3  
Transportation Modes to Work in the KCAG Region (2012)**

Location	Total Workers 16 and over	Transit Dependent		Drive Alone		Carpool		Public Transit		Walk/Bike		Other/Work at Home		Mean Travel Time to Work Minutes
		People	%	People	%	People	People	People	%	People	%	People	%	
California	16,282,943	3,875,340	23.8	11,894,644	73.0	1,877,683	11.5	837,820	5.1	618,752	3.8	1,054,044	6.5	27.0
Kings County	55,305	11,146	20.2%	41,937	75.8	8,535	15.4	660	1.2	1,598	2.9	2,575	4.7	21.1
Armona	1,898	425	<b>22.4</b>	1,481	<b>78.0</b>	232	12.2	0	0	9	0.5	176	<b>9.2</b>	17.5
Avenal	4,298	1,337	<b>31.1</b>	2,213	51.5	1,738	<b>40.4</b>	22	0.5	69	1.6	256	<b>6.0</b>	<b>29.2</b>
Corcoran	4,376	986	<b>22.5</b>	3,553	<b>81.2</b>	499	11.4	37	0.8	130	<b>3.0</b>	157	3.6	19.0
Hanford	23,248	4,248	18.3	18,591	<b>80.0</b>	3,078	13.2	91	0.4	663	2.8	825	3.6	20.5
Home Gardens	2,104	633	<b>30.1</b>	1,423	67.6	410	<b>19.5</b>	60	<b>2.9</b>	80	<b>3.8</b>	131	<b>6.2</b>	19.1
Kettleman City	1,540	128	8.3	1,195	<b>77.6</b>	169	11.0	0	0	79	<b>5.1</b>	97	<b>6.3</b>	18.0
Lemoore	12,684	2,384	18.8	10,193	<b>80.4</b>	1,582	12.5	156	1.2	338	2.7	415	3.3	<b>22.0</b>
Stratford	1,540	128	8.3	1,195	<b>77.6</b>	169	11.0	0	0	79	<b>5.1</b>	97	<b>6.3</b>	18.0
U.A.	5,157	1,005	19.5	3,288	63.8	827	<b>16.0</b>	294	<b>5.7</b>	309	<b>6.0</b>	439	<b>8.5</b>	16.5

Notes: **Bold**=Higher than County Proportion, UA = Unincorporated City or community area, Kettleman City and Stratford share the same Census Tract.  
Source: Census tract level data from U.S. Census 2008-2012 5-Year American Community Survey.



Summary of Environmental Justice Communities. Based on the above discussion, all of the communities within Kings County are considered areas of environmental justice concern given their high concentrations of low income or minority populations. Figure 4.6-3 shows the distribution of Environmental Justice Communities within Kings County.

Community Outreach. KCAG adopted a Public Participation Plan (PPP) in fiscal year 2007-08, to comply with the outreach requirements for environmental justice. The PPP includes enhanced outreach approaches to environmental justice populations to meet state and federal principles and to eliminate participation barriers to active participation in all populations. KCAG updated the program and created a Supplemental PPP that was adopted in 2013 for the development of the 2014 RTP-SCS.

The 2013 Supplemental PPP established strategies for public outreach to encourage the active participation of a broad range of stakeholder groups in the planning process, including, but not limited to affordable housing advocates, transportation advocates, neighborhood and community groups, environmental advocates, representatives from the home building industry, broad-based business organizations, landowners, commercial property interests, all population sectors, and homeowner associations. These stakeholder groups were solicited to participate in the public workshops and became the membership of the RTP Stakeholder Work Group.

KCAG participated in the Valley-wide SCS public outreach program, Valley Visions, a collaborative effort among the eight metropolitan planning organizations (MPOs) located in the San Joaquin Valley. The Valley Visions outreach program received funding assistance from a Proposition 84 grant that was used to support a regional modeling effort, as well as enhanced outreach. KCAG revised the Valley Visions effort to develop a customized Kings Regional Vision outreach program.

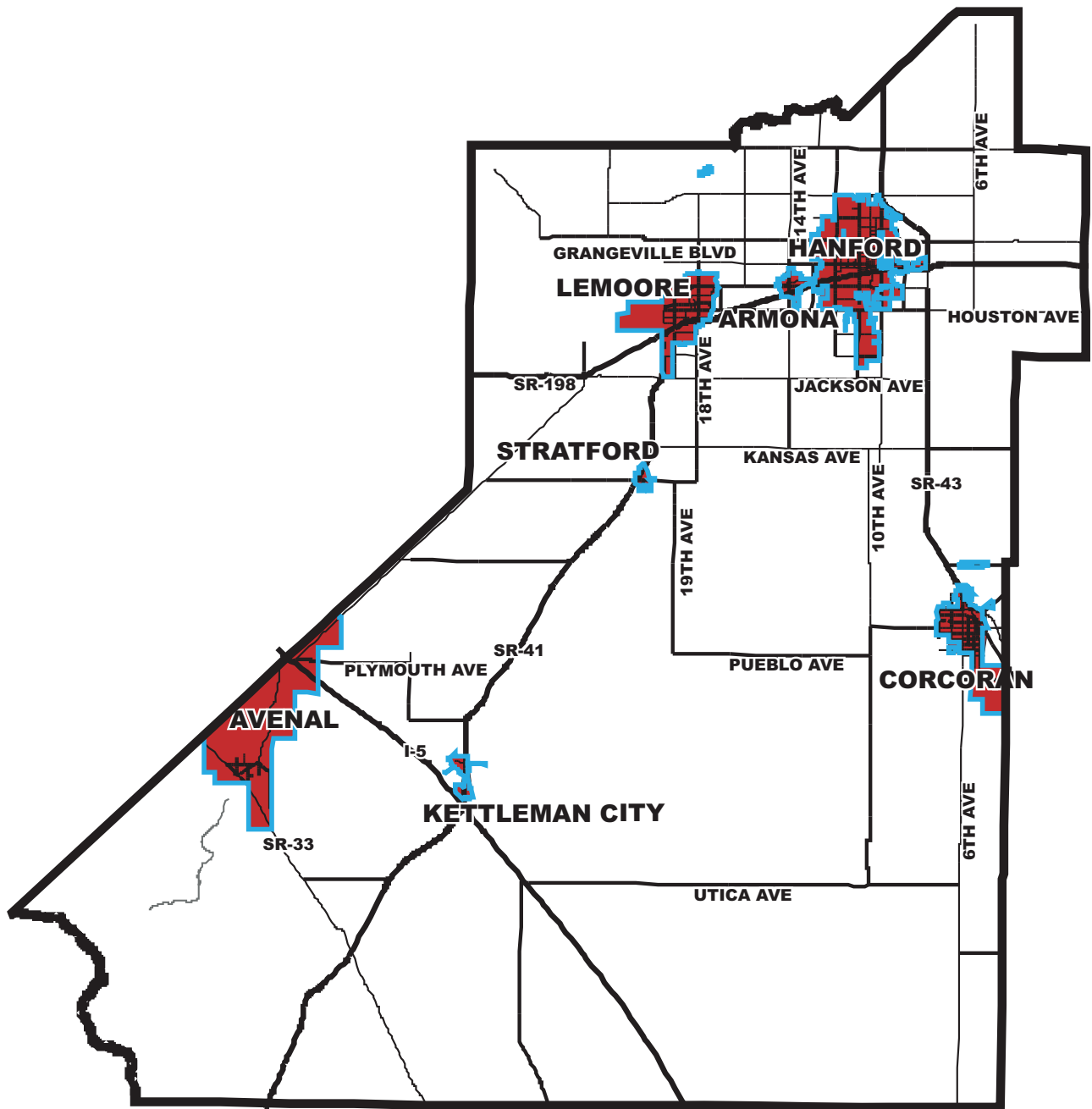
KCAG held three public workshops in the cities of Hanford, Lemoore and Kettleman City during the first phase of the outreach effort and an additional three workshops following the release of the draft RTP and SCS, in the cities Corcoran, Hanford/Lemoore, and Avenal. Public hearings will also be held at two KCAG Commission meetings during circulation of the EIR and prior to the adoption of the RTP and SCS.

### **c. Regulatory Framework**



Federal Regulations. KCAG receives funding from federal agencies such as the Federal Highway Administration and Federal Transit Administration for some of its programs and activities. Therefore, KCAG conducts its federally funded programs and activities in accordance with guidance issued by the federal agencies pursuant to Executive Order 12898 and subsequent implementing guidance from the CEQ.

In response to Executive Order 12898, the United States Department of Transportation (USDOT) issued an Order to Address Environmental Justice in Minority Populations and Low-Income Populations. This order, issued in April 1995, sets guidelines to ensure that all federally-funded transportation-related programs, policies, or activities that have the potential to adversely affect human health or the environment involve a planning and programming process that explicitly considers the effects on minority populations and low-income populations. Furthermore, in

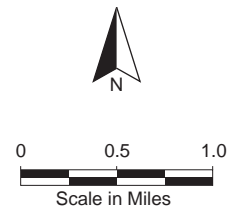




LEGEND:

-  Kings County EJ Communities
-  Kings County Non Environmental Justice Communities

Source: U.S. Census, 2010, TAHA 2014



Environmental Justice Communities

Figure 4.6-3



1998, the Federal Highway Administration (FHWA) has issued the “FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Population” that defines and provides guidance for environmental justice issues as they apply to projects overseen by the FHWA.

The FTA has also issued regulatory guidance for implementing environmental justice analyses-Circular 4703.1, Environmental Justice Policy Guidance, which was issued September 19, 2011. This guidance is consistent with the implementing guidelines from CEQ which require that, “minority populations should be identified when the minority population of the affected area exceeds 50 percent or when the minority population percentage of the affected area is less than 50 percent but is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis.” For the purpose of this analysis, Kings County represents the larger geographic unit of comparison for which the communities within Kings County are compared. Demographic information from State of California has also been presented for comparison purposes.

#### State Regulations.

*California Government Code Section 65040.12.* Senate Bill 115 of 1999 and Senate Bill 89 of 2000 (Section 65040.12 of the Government Code) required the California Office of Planning and Research (OPR) to:

- Consult with the Secretaries of the California Environmental Protection Agency, the Resources Agency, and the Business, Transportation, and Housing Agency, the Working Group on Environmental Justice established pursuant to Section 72002 (now Section 71113) of the Public Resources Code, any other appropriate State agencies, and all other interested members of the public and private sectors in this State.
- Coordinate OPR's efforts and share information regarding environmental justice programs with the Council on Environmental Quality, the United States Environmental Protection Agency, the General Accounting Office, the Office of Management and Budget, and other federal agencies.
- Review and evaluate any information from federal agencies that is obtained as a result of their respective regulatory activities under federal Executive Order 12898, and from the Working Group on Environmental Justice established pursuant to Section 72002 of the Public Resources Code.

SB 89 also required the formation of an advisory committee, Environmental Justice Advisory Committee (CEJAC), to provide information and assistance to the Secretary of the California Environmental Protection Agency (Cal EPA) and Interagency Working Group on Environmental Justice (IWG) in establishing and implementing an intra-agency strategy to achieve environmental justice. In 2004, the Cal EPA released its Environmental Justice Strategy and Action Plan based on the IWG recommendations for identifying and addressing any gaps in existing programs, policies, or activities that may impede the achievement of environmental justice and suggested procedures for collecting, maintaining, analyzing, and coordinating information relating to its environmental justice strategy.



*California Government Code Section 11135.* California Government Code Section 11135 states that no person in the State of California shall, on the basis of race, national origin, ethnic group identification, religion, age, sex, sexual orientation, color, or disability, be unlawfully denied full and equal access to the benefits of, or be unlawfully subjected to discrimination under, any program or activity that is conducted, operated, or administered by the State or by any State agency, is funded directly by the State, or receives any financial assistance from the State.

## 4.6.2 Impact Analysis

**a. Methodology and Significance Thresholds.** A significant impact is defined as “a substantial or potentially substantial adverse change in the environment” (CEQA Section 21068). Based on the information provided above, an impact is significant if it would cause disproportionately high and adverse environmental and public health effect and interrelated difficult social and/or economic effect for minority or low-income populations. Therefore, the 2014 RTP-SCS would have a significant impact on a community of concern if:

- *Implementation of the 2014 RTP-SCS would lead to disproportionately high and adverse human health or environmental impacts to the minority populations, low-income populations, and/or populations with low mobility in the KCAG region.*
- *The mobility benefits derived from the 2014 RTP-SCS in terms of travel times and accessibility by transit and/or single occupancy vehicle would be substantially less for minority populations, low-income populations, and/or populations with low mobility in the KCAG region.*

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

**Impact EJ-1** **Implementation of the 2014 RTP-SCS may cause adverse effects on a minority or low-income population; however, these potential impacts would not be disproportionately high as per Executive Order 12898 regarding environmental justice. This would be a Class III, less than significant impact.**

Temporary Impacts. During construction of some transportation improvement projects and future development under the 2014 RTP-SCS, some minority and/or low-income populations may be affected (see discussion of Environmental Justice Communities below and list of 2014 RTP-SCS projects that may result in adverse effects to these communities). These improvement projects may have temporary air quality, noise, and traffic impacts on surrounding communities (refer to the individual sections for Air Quality (Section 4.2), Noise (Section 4.11), and Transportation and Circulation (Section 4.12)). Specific air quality effects could include exposure to dust resulting from operation of construction vehicles (e.g., scrapers, loaders, dump trucks), and clearing and grading activities. Other air quality effects include temporary exposure to hazardous air emissions, including diesel emissions from construction equipment. Construction noise effects from clearing, grading, and laying asphalt could expose nearby receptors to levels up to 89 decibels at 50 feet from the source depending on the type of equipment used. Temporary traffic impacts include delays during road closures or other disturbances caused by construction activities. Minority populations may be exposed to these effects from air quality, noise, and traffic; however, mitigation is provided to reduce these



effects which are listed in the corresponding air quality, noise, and traffic sections. The 2014 RTP-SCS projects are located throughout the populated areas of the KCAG region and the communities within the KCAG region are all considered Environmental Justice Communities. These construction effects would be temporary, would affect the Environmental Justice populations throughout Kings County and would not be borne by Environmental Justice populations disproportionately. Thus, these impacts are considered less than significant.

Long-Term Impacts. Environmental Justice populations located in proximity to major highways, particularly Interstate 5, State Routes 33, 41, 43, and 198, may be exposed to hazardous criteria pollutants. However, as discussed in Section 4.2, *Air Quality*, diesel PM<sub>2.5</sub>, PM<sub>10</sub> and NO<sub>x</sub> emissions under the 2014 RTP-SCS would be lower than existing conditions and would not result in an increase in toxic air emissions when compared to the future 'no build scenario. The resulting average daily traffic volumes for these roadways would not exceed 25,000 and are substantially less than the 100,000 average traffic volume baseline established by the California Air Resource Board. As a result, impacts to minority populations that may occur in proximity to freeways would be less than significant.

Vehicle miles traveled (VMT) would increase with the proposed project compared to existing conditions, primarily due to an increase in population of approximately 47 percent. Ambient noise throughout the region, particularly in urbanized areas, would increase as a result of an increase in vehicle miles traveled compared to existing conditions. However, the increase in vehicle miles traveled would be dispersed across the County and would not be concentrated in any one area. The California Department of Transportation has indicated that a doubling in traffic volumes is typically needed to generate an audible three-decibel increase in noise levels. The proposed improvements are not expected to result in changes to arterials and highways that would double existing traffic volumes. In addition, the transportation improvements would occur throughout the County and any potential noise increases would not be disproportionately borne by an individual Environmental Justice population. Therefore, impacts would be less than significant.

Specific 2014 RTP-SCS projects that may result in impacts to the above mentioned Environmental Justice Communities are listed in Table 4.6-4. These communities contain various minority populations and may be affected by the 2014 RTP-SCS projects; however, many of the projects within these communities would improve access to other parts of the region as well as access to alternative modes of transportation. The benefits of the proposed improvements would outweigh the temporary construction effects and incremental operational air quality, noise and traffic effects that could occur with the increase in vehicle miles traveled compared to existing conditions. Therefore, the 2014 RTP-SCS projects would not disproportionately impact Environmental Justice populations, as other non-minority populations would be similarly impacted by 2014 RTP-SCS projects.

~~The 2014 RTP-SCS identifies a land use scenario that increases neighborhood connectivity, the connectivity of housing to commercial and community facilities, higher density infill development with a mix of housing types, and a better jobs/housing balance. While future residents within a compact development pattern could include minority populations, this land use scenario would not disproportionately affect minority populations as future development projects would serve a diverse population and would be dispersed throughout urbanized areas.~~



The 2014 RTP-SCS establishes transportation goals that focus transportation investments on the safety and operational efficiency of the existing regional roadway system, such as traffic light synchronization and channelization; increased investment in bicycle and pedestrian facilities; increased investment in public transportation, such as concentrations and connectivity and rural transit centers; and the development of infrastructure for alternative fuels. While improvements to ~~land use and~~ transportation could affect Environmental Justice populations, the dispersion of the proposed improvements and strategies would not be concentrated in a particular area that would disproportionately affect Environmental Justice populations. Therefore, based on the analysis above and proposed goals, the 2014 RTP-SCS would not disproportionately expose minority populations, low-income population or low-mobility populations to adverse environmental impacts. Impacts would be less than significant.

Mitigation Measures. None required in addition to those recommended to address impacts to Air Quality, Noise and Transportation referenced above.

Significance after Mitigation. Impacts would be less than significant without mitigation.

**Impact EJ-2**    **The mobility benefits derived from the 2014 RTP-SCS related to travel times and accessibility by transit, single-occupancy vehicles, bicycling or walking will not be less for minority populations, low-income populations, and populations with low mobility in the KCAG region than for the population as a whole. This impact would be Class III, less than significant.**

The 2014 RTP-SCS identifies several performance measures to evaluate the effectiveness of the 2014 RTP-SCS at achieving KCAG's planning goals and objectives. Performance measures related to social equity and mobility include: Distribution of RTP-SCS Investments within Environmental Justice Communities.

2014 RTP-SCS transit projects are likely to improve the overall accessibility to high quality transit within the KCAG region. Proposed transit projects are distributed throughout the KCAG region and are focused around the higher populated and urbanized areas of the region. As such, the 2014 RTP-SCS projects would increase the ability of the Environmental Justice Communities to use public transit to travel to other parts of the KCAG region. Based on the evaluation of the transportation improvement projects ~~and future land use patterns~~ envisioned by the 2014 RTP-SCS, mobility benefits would not be significantly less for low-income or minority populations.

According to traffic modeling data (See Table 4.6-4 below), the proposed improvements identified in the 2014 RTP-SCS would reduce travel times in Environmental Justice areas by 0.5 to 0.6 percent compared to existing conditions (2013) and by 0.7 to 0.8 percent compared to the future 'no project scenario' (2040). These decreases in travel times are more beneficial than the effects on travel times within non-Environmental Justice areas. Travel times would increase by 0.5 percent compared to existing conditions and decrease by 0.1 percent compared to baseline conditions within non-Environmental Justice areas. Therefore, the operational benefits of the proposed improvements would be more concentrated in Environmental Justice areas. Overall, the 2014 RTP-SCS would improve mobility for Environmental Justice Communities compared



to existing, baseline, and non-Environmental Justice Communities. Therefore, impacts would be less than significant.

**Table 4.6-4  
Average Change in Travel Time associated with the RTP-SCS Projects**

	<b>EJ Communities</b>	<b>Non-EJ Communities</b>
<b>Compared to Existing Conditions</b>	- 0.5 – 0.6 %	+ 0.5 %
<b>Compared to 2040 with No RTP-SCS Projects</b>	- 0.7 – 0.8 %	- 0.1 %

Source: Terry Hayes Associates, 2014

Mitigation Measures. None required.

Significance after Mitigation. Impacts would be less than significant without mitigation.

**c. Projects That May Result in Impacts.** The 2014 RTP-SCS projects are listed in Table 4.6-5. Some specific projects may create temporary or localized effects, as discussed under Impact EJ-1. However, overall, the 2014 RTP-SCS is expected to improve access and mobility throughout the KCAG region, including to/from and within the Environmental Justice Communities. Additionally, individual projects could affect Environmental Justice Communities, but would not necessarily do so disproportionately when compared to non-Environmental Justice Communities and the overall population.

**Table 4.6-5  
2014 RTP-SCS Individual Projects  
With Potential Effects to Environmental Justice Communities**

<b>Jurisdiction</b>	<b>Facility</b>	<b>Project Location</b>	<b>Project Description</b>	<b>Impact</b>
Hanford	W. Lacey Blvd	Hfd.-Arm to Mall Dr. (Interchange Project)	Widen from 2 to 6 lanes w/ median	EJ-2
Hanford	6th St	Between Harris and Brown Sts.	Construct Park-n-Ride Facility	EJ-1, EJ-2
Hanford	12th Ave	Mall Dr. to N. of Lacey	Rehabilitate/Overlay/Restripe (4 to 6 lanes)	EJ-2
Hanford	City wide	Various	Bike facility improvements	EJ-2
Hanford	11th Ave	11th / Grangeville Blvd.	Intersection Improvements/Channelization	EJ-2
Hanford	City wide	Electric charging station	Electric charging station	EJ-2
Hanford	12th Ave	Houston Ave. to Hfd-Arm	Widen from 2 to 4 lanes w/ median	EJ-1, EJ-2
Hanford	E. Lacey Blvd	10th Ave. to 9th Ave..	Widen from 2 to 4 lanes w/ left turn pockets	EJ-1, EJ-2
Hanford	E. Lacey Blvd	9th Ave. to Sierra Dr.	Widen from 2 to 4 lanes w/ left turn pockets	EJ-1, EJ-2
Hanford	W. Lacey Blvd	12 1/2 Ave. to 13th Ave.	Widen from 2 to 4 lanes w/ median	EJ-1, EJ-2
Hanford	Fargo Ave	BN&SF to 12th Ave.	Widen from 2 to 4 lanes w/ left turn pockets	EJ-1, EJ-2
Hanford	Grangeville Blvd	12th Ave. to 13th Ave.	Widen from 2 to 4 lanes w/ left turn pockets	EJ-1, EJ-2



**Table 4.6-5  
2014 RTP-SCS Individual Projects  
With Potential Effects to Environmental Justice Communities**

Jurisdiction	Facility	Project Location	Project Description	Impact
Hanford	Fargo Ave	12th Ave. to 13th Ave.	Widen from 2 to 4 lanes w/ left turn pockets	EJ-1, EJ-2
Hanford	Hfd.-Arm Rd	12th Ave. 13th Ave.	Widen from 2 to 4 lanes w/ left turn pockets	EJ-1, EJ-2
Hanford	12th Ave	Fargo Ave.to Flint Ave.	Widen from 2 to 4 lanes w/ median	EJ-1, EJ-2
Hanford	Houston Ave	10th Ave. to 11th Ave.	Widen from 2 to 4 lanes w /median	EJ-1, EJ-2
Hanford	Houston Ave	10th Ave. to 11th Ave.	Widen from 2 to 4 lanes w/ median	EJ-1, EJ-2
Hanford	Grangeville Blvd	9 1/4 Ave. to Hwy 43	Widen from 2 to 4 lanes w/ median	EJ-1, EJ-2
Hanford	9th Ave	Lacey Blvd. to Grangeville Blvd.	New arterial roadway-4 lanes w/ median	EJ-1
Hanford	9th Ave	Grangeville Blvd. to Fargo Ave.	New arterial roadway-4 lanes w/ median	EJ-1
Hanford	11th Ave	Houston Ave. to Idaho Ave.	Widen from 2 to 4 lanes w/ left turn pockets	EJ-1
Hanford	10th Ave	Hfd. - Arm. Rd. to Houston Ave.	Widen from 2 to 4 lanes w/ left turn pockets	EJ-1, EJ-2
Kings County	10 ½ Ave	Kansas to Nevada	widen to 28 feet without increasing lanes	EJ-1
Kings County	Avenal Cutoff Rd	Nevada Ave to I-5	Install right turn and acceleration lanes	EJ-1
Kings County	County Intersections	Various Locations	Install right turn lanes and flashing beacons	EJ-1
Kings County	18th Ave	Iona to Jersey	Install left turn lane	EJ-1, EJ-2
KCAPTA	13	Hanford/Stratford/Kettleman/Avenal	Add morning route	EJ-2
KCAPTA	12	Hanford/Corcoran	Add morning route	EJ-2
KCAPTA		County wide	Bus intelligent system	EJ-2
Lemoore	CNG Station	CNG Station	Expansion-Purchase Storage Vessel	EJ-1, EJ-2
Lemoore	Cinnamon Dr	19th Ave to Hill Dr.	Bicycle/Pedestrian Facilities	EJ-2



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## 4.7 GEOLOGY

This section discusses potential impacts relating to geologic and soil hazards.

### 4.7.1 Setting

**a. Regional Geology.** Kings County is located in the west-central portion of the San Joaquin Valley, the southern section of the Great Valley Geomorphic Province of California. The Central Valley is a large, asymmetrical, northwestwardly-trending, structural trough formed between the uplands of the California Coast Ranges to the west and the Sierra Nevada mountain range to the east. The Great Valley is over 400 miles long and approximately 50 to 60 miles wide in the project area. The Valley is subdivided into the Sacramento Valley (north of the Sacramento-San Joaquin Delta) and the San Joaquin Valley (south of the Delta). The southern part of the Valley (including most of Kings County) is internally draining, with the distributaries of the Kings and Tule rivers and Cross Creek flowing into the Tulare Lake Bed. North of the Kings River, runoff is directed into the San Joaquin River, which flows northward.

The southern San Joaquin Valley is bounded by the low mountains of the Coast Ranges to the west, the San Emigdio and Tehachapi Ranges to the south, and the foothills of the Sierra Nevada to the east. The valley is filled with up to six vertical miles of sediment (Norris and Webb, 1990). The sediments include marine, alluvial, and lacustrine (lake) deposits. The valley is asymmetric with its axis located to the west of the geographic center of the valley. In general, the rivers lie along the axis and the thickest accumulation of sediments is also located along the axis. The geologic structure in the subsurface produced by folding and faulting and the presence of significant petroleum source rocks and suitable reservoir rocks has resulted in the development of numerous oil and gas fields within the southern San Joaquin Valley (including the Kettleman Hills). This sedimentary sequence is underlain in the west by granitic and metamorphic rocks of the Sierran structural block and by mafic and ultramafic bedrock in the east.

The alluvial sediments include relatively coarse-grained deposits along river channels and alluvial fans on the margin of the valley. These sediments include the Tulare and San Joaquin Formations, which outcrop along the western margin of the valley and dip toward the center of the valley. These formations are relatively resistant to erosion and form low hills, including the Kettleman Hills in southwestern Kings County.

During the wetter climatic periods of the Pleistocene Epoch (1.8 million to 11,000 years ago), a series of lakes formed in the western, lowest portions of the valley floor. These lakes included, from north to south, Tulare, Buena Vista, and Kern lakes. During the relatively warmer and drier climatic conditions of the Holocene Epoch (the last 11,000 years), the water levels in the lakes receded and the lakes became seasonal lakes or playas. Fine-grained lake deposits are enduring evidence of the presence of the lakes. During the late nineteenth and early twentieth century's, much of the area of the lakes were drained and put into agricultural production. The central portion of Kings County occupies a portion of Tulare Lake, the largest of the Pleistocene lakes. The Kings, Kaweah (Cross Creek), and Tule River Canal, as well as other distributaries, terminate within the former Tulare Lake Bed, which partially and temporarily fills during periods of high runoff.





Finer-grained lacustrine and flood basin deposits related to the Pleistocene lakes are found in the central portion of the valley. The Tulare, Kern, and Buena Vista Lake Beds were sediment deposition centers located within structural depressions on the valley floor. Tectonic subsidence of the surface is caused by down-warping of the earth's crust. The fine-grained sediments underlying the Tulare Lake Bed are more than 3,600 feet thick. These deposits include the E clay, a diatomaceous clay deposited over a very large area of the San Joaquin Valley. The E clay is considered equivalent to the Corcoran Clay Member of the Tulare Formation. Within Kings County the top of the E clay occurs at depths of approximately 250 to 900 feet and the layer is up to 160 feet thick.

In addition to the E clay, other younger, less extensive but similar clay deposits have been recognized. These deposits are found along the topographic axis of the valley, including the area of the project site. The C clay is mapped from near the town of Mendota in northern Fresno County to the Kern Lake Bed. This unit ranges in depth from about 100 to 330 feet below the ground surface and is 5 to 45 feet thick. The A clay is the youngest of the clay deposits and is also found underlying the axis of the valley. This unit is typically encountered at depths of less than 10 to 70 feet and is generally 5 to 70 feet thick. The presence of the A clay usually results in perching of groundwater at shallow depths.

**b. Geomorphology and Topography.** The most prominent topographic feature in Kings County is the Tulare Lake Bed. The lake bed is a broad, shallow depression covering the central and southern portions of the County. The land surface within the basin is nearly flat but has been modified significantly by agricultural grading. The average elevation of the lake bed is approximately 175 and 192 feet National Geodetic Vertical Datum (NGVD). The northern portion of the County is typified by alluvial fan surfaces formed along the Kings and Tule rivers and Cross Creek. The alluvial fan surface slopes gently toward the Tulare Lake Bed.

The Kettleman Hills region, located in the southwestern portion of the county, forms a distinct geomorphic setting. The region of the county is characterized by northwest southeast trending ridges (i.e., Kettleman Hills, Pyramid Hills, Keryenhagen Hills, and Avenal Ridge) and intervening valleys (i.e., Kettleman Plains and Sunflower Valley). The topography is developed on folded and faulted Pleistocene and Pliocene sedimentary rocks. The ridges rise to a maximum elevation of 3,473 feet NGVD at Table Mountain at the western boundary of Kings County. The slopes are moderately steep to steep.

The topography of most of the County is relatively flat. However, elevation ranges are at the lowest point at 175 feet above sea level in the Tulare Lakebed, and range up to 3,500 feet above sea level in the southwest along the Coast Ranges (Kings County, 2010).

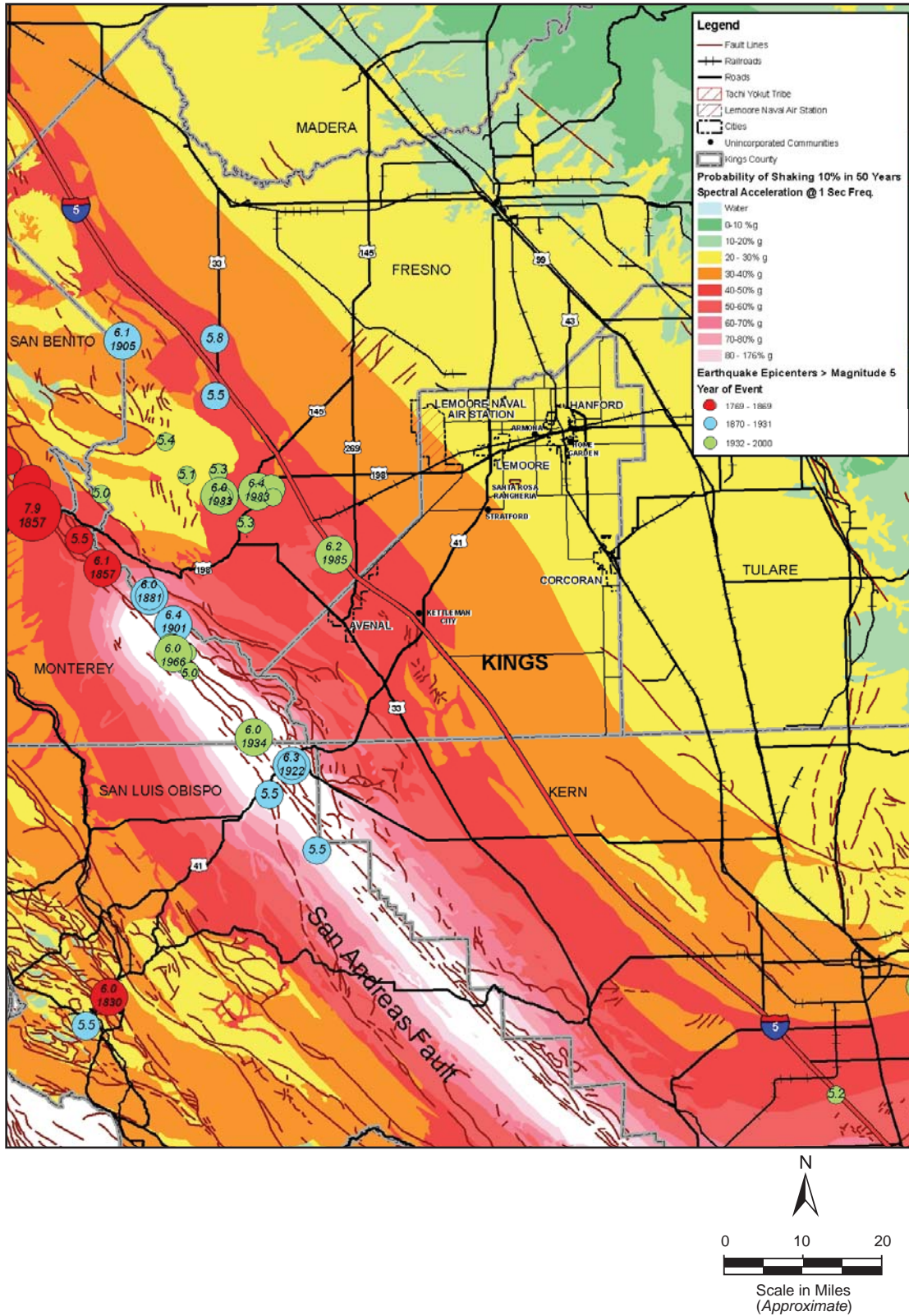
**c. Seismicity.** Kings County has no known major fault systems within its boundaries. The greatest potential for seismic activity in Kings County is posed by the San Andreas Fault, which is located approximately four miles west of the Kings County line. The San Andreas Fault marks the divide between the North American and the Pacific Tectonic Plates. Another large fault that may pose potential geologic hazards for Kings County is the White Wolf fault located south of the county near Arvin and Bakersfield.

Over the past 200 years, Kings County has not experienced any damaging earthquake equal to or greater than a Mercalli Index (M) 6.0. However, several more significant earthquakes have occurred within close vicinity of the county's boundary. The largest and most forceful earthquake was the 1857 Fort Tejon earthquake (M 7.9) with an epicenter that occurred in Monterey County approximately seven miles west of the Kings County boundary in the community of Parkfield. During this event the San Andreas Fault ruptured for a length of approximately 225 miles between Parkfield and San Bernardino. The largest earthquake in Southern California since the Fort Tejon earthquake was the 1952 Kern County earthquake (M 7.3) which occurred on the White Wolf fault. The epicenter for this quake occurred approximately 38 miles southeast of the Kings County boundary near Bakersfield and produced ground shaking felt over 200 miles away. The most recent earthquakes to affect Kings County occurred during the 1980's. The 1982 New Idria earthquake (M 5.4) and the 1983 Coalinga (M6.5) earthquakes both occurred approximately 20 miles from the western border of Kings County. The 1985 Kettleman Hills earthquake (M 6.1) followed these two earthquakes with an epicenter located four miles west of the Kings County border just north of the City of Avenal. All three of these earthquake incidents produced low-level ground shaking and low local magnitude in Kings County. Figure 4.7-1 identifies Earthquake Hazards including historical epicenter locations.

The potential for ground shaking is discussed in terms of the percent probability of exceeding peak ground acceleration (% g) in the next 50 years. It varies from 20-30% g in the northeast third of the county, including the cities of Hanford, Lemoore, Corcoran, and the Santa Rosa Rancheria to 30-40% g in the central part of the county, which is primarily agricultural (AMEC, 2007). Earthquake hazard is more severe in the southwest third of the county and the city of Avenal. The potential for ground shaking in this area ranges from 40-50% g to 70-80% g at the southwestern county line.

The primary hazard due to seismic activity in Kings County would come from ground shaking. The potential for extensive surface rupture is considered to be minimal, since Kings County does not contain a major fault system. Minor surface rupture could be expected in areas of minor faulting, primarily in the southwestern portion of Kings County along the Kettleman Hills or west of Kings County along the Nunez Fault located near Coalinga. Research coordinated by the Southern California Earthquake Center in 1995 concluded that there is an 80 to 90 percent probability that an earthquake of M 7.0 or greater will hit Southern California along the San Andreas fault before 2024 (CA-SHMP 2004). The southern San Andreas Fault section near the Fort Tejon earthquake of 1857, is considered a likely location for an earthquake within the next few decades. Earthquake recurrence on the southern San Andreas Fault varies greatly from under 20 years at Parkfield to more than 200 years in other sections.

Additional technical data is also derived from the 1974 Five County Seismic Safety Element, which is still valid and is the basis for the Kings County Seismic Zone Description (Table 4.7-1) and Seismic Safety Map included as Figure 4.7-2. Seismic Zones are categorized by the intensity of ground motion that could be reasonably anticipated if an earthquake affected Kings County. Within Kings County, territory is divided between two Seismic Zone groups that

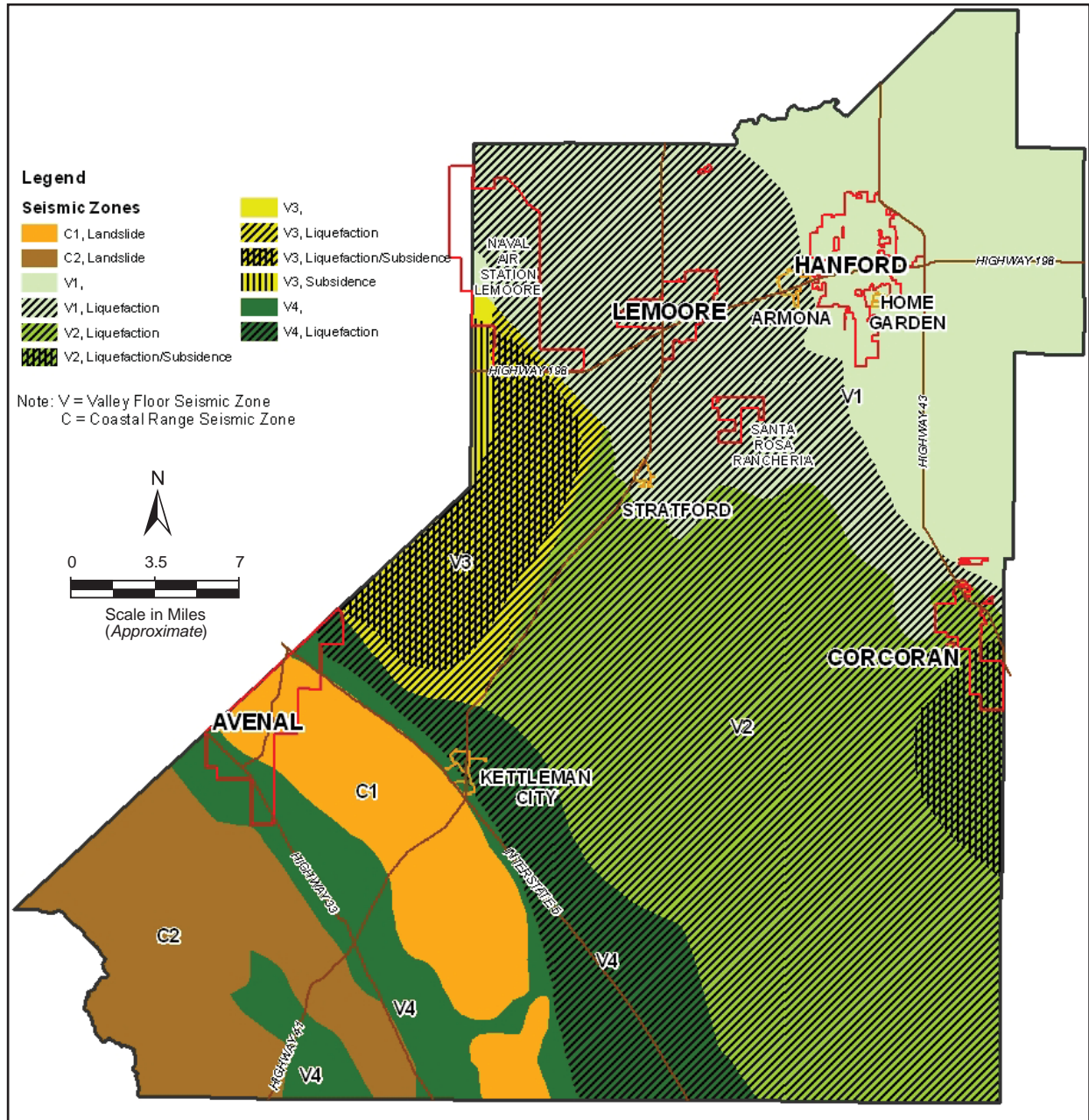


Kings County Earthquake Hazards

Figure 4.7-1

Source: County of Kings 2002.

KCAG



correspond to general groundshaking characteristics. Valley Zones (V1 through V4), represents areas along the valley floor with highest near-surface amplification identified along the west and decreasing towards the east due to the damping of thick alluvial sediments. Coast Ranges Zones (C1 and C2) represent the Kettleman Hills and Coast Range areas that are closest to the San Andreas Fault and anticipated to experience moderately high ground shaking levels. The safest zones correspond generally to the areas of greatest population within the county. Zone V1, the area of least expected seismic shaking, encompasses the Cities of Hanford and Lemoore, Communities of Armona, Home Garden and Stratford, and Naval Air Station Lemoore residential areas and Santa Rosa Rancheria. Zone V2 contains the City of Corcoran. Kettleman City and Avenal; however, are located within Zone V4 and adjacent to more critical Coast Range Zones.

~~Land use policies will continue to require large minimum parcel sizes in agricultural and natural resource conservation zones, and reduce potential losses by lowering potential development density throughout more intensive seismic zones. Construction in the more critical seismic zones, however, would probably require additional reinforcement to offset the increased expected seismic forces.~~

**Table 4.7-1  
 Seismic Zone Description**

<b>Seismic Zone</b>	<b>Generalized Geologic Formations</b>	<b>Amplification of Shaking</b>
<b>*V1</b>	Moderately thick section of marine and continental sedimentary deposits overlying the granitic basement complex	Amplification of shaking that would affect low to medium- rise structures is relatively high but the distance to either of the fault systems that are expected sources of the shaking is sufficiently great that the effect should be minimal
<b>*V2</b>	Moderately thick section of marine and continental sedimentary deposits overlying the granitic basement complex	Amplification of shaking that would affect low to medium- rise structures is low and the distance to the San Andreas fault zone is moderate. The combined effect is that shaking is expected to be minimal
<b>*V3</b>	Thick section of marine and continental sedimentary deposits	Amplification of shaking is reduced by the damping effect of the thick sedimentary section, but the moderate proximity of the San Andreas fault zone results in a moderate increase in expected shaking over that for the east side of the valley
<b>*V4</b>	Thick section of consolidated sedimentary units overlain by thick unconsolidated alluvial fan deposits	Amplification of shaking is reduced by the damping effect of the thick sedimentary section, but its moderately close proximity to the San Andreas fault zone results in the expectation of moderately high shaking characteristics
<b>**C1</b>	Thick section of consolidated sedimentary units, with a high frequency of exposure	Amplification of shaking is low because of the firm nature of the surface in this area. But, because of its close proximity to the San Andreas fault zone, the combination results in moderate to moderately high shaking characteristics
<b>**C2</b>	Moderately thick section of marine sedimentary rock unit with a high frequency of exposure throughout the area, with some metamorphics locally, which are of minor importance	Amplification is low, but the close proximity of the San Andreas fault zone should result in moderately high to high shaking characteristics

*\* Valley Floor Seismic Zone \*\* Coastal Range Seismic Zone Source: 1974 Five County Seismic Safety Element*

**d. Subsidence and Liquefaction.** Ground settlement and soil compaction may occur as a result of seismic ground shaking. When unconsolidated valley sediments are saturated with water, water is forced to the ground surface, where it emerges in the form of mud spouts or sand boils. If soil liquefies in this manner (liquefaction), it loses its supporting capacity, which



can result in the minor displacement to total collapse of structures. These types of unconsolidated sediments represent the poorest kind of soil condition for resisting seismic shock waves. The potential for liquefaction is recognized throughout the San Joaquin Valley where unconsolidated sediments and a high water table coincide. However, the risk and danger of liquefaction and subsidence occurring within the county is considered to be minimal.

Most of Kings County east of Interstate 5 and west of the State Route 43 is mapped as having liquefaction potential according to the Five County Seismic Safety Element and also displayed on Figure 4.7-2. Figure 4.7-2 shows various seismic zones and areas where landslides, subsidence, or liquefaction could possibly occur. As detailed in Figure 4.7-2, S-2, Zones V4, C1, and C2 would likely experience the greatest ground shaking. Consideration of future development proposals in areas of potential liquefaction should place primary emphasis upon communicating to developers the findings of the Five County Seismic Safety Element and studies performed by the U.S. Geological Survey. The problem of potential liquefaction should be handled on a site-by-site basis by a licensed soils engineer.

**e. Landslides.** Landslides may be triggered by both natural and human induced changes in the environment resulting in slope instability. Precipitation, topography, and geology affect landslides and debris flows. Human activities, such as mining, road construction, and changes to surface drainage areas, also affect the landslide potential. Landslides often accompany other natural hazard events, such as floods, wildfires, or earthquakes. They can also occur slowly or very suddenly and damage and destroy structures, roads, utilities, and forested areas and cause injuries and death.

Kings County, however, has very “Low” to “Moderate” risk landslide areas that are located in remote uninhabited sections of southwest Kings County. Although landslides are primarily associated with steep slopes (i.e., greater than 15 percent), they may also occur in areas of generally low relief and as cut-and-fill failures, river bluff failures, lateral spreading landslides, collapse of mine waste piles, and failures associated with quarries and open-pit mines.

The USGS Landslide Hazards map was used to identify possible landslide problem areas. Figure 4.7-3 depicts where territories throughout the State, including Kings County, may be susceptible to landslides. Those areas potentially susceptible to landslides within Kings County are nearly all defined as having “Low” (less than 1.5 percent of area involved) and “Moderate” potential (1.5 to 15 percent of area involved) for landslide incident. A smaller portion of land within the Coast Ranges, along the southwest corner of the county, is the only area rated to have “High” (Greater than 15 percent of area involved) landslide incident probability. However, this portion of the county is designated for Agricultural and Natural Resource Conservation land uses and therefore not likely to result in any dense population or development.

**f. Regulatory Setting.** ~~The County’s health and safety elements of the County of Kings and the four cities, the~~ The Kings County region has an adopted Kings County Multi-Jurisdiction Multi-Hazard Mitigation Plan (HMP), which is integrated into the County’s Health and Safety Element of the 2035 Kings County General Plan, and integrated into the four city general plans. All jurisdictions also implement ~~and~~ the California Building Code that include measures to protect lives, health, property and public welfare. The health and safety elements

are intended to relate land use policies to local safety planning and contains policies for determining acceptable levels of public risk imposed by these land uses, as well as policies for mitigating the effects of natural or manmade catastrophes. The County Health and Safety Element incorporates the HMP and implements the policy recommendations for the County's area of responsibility as guiding policies in dealing with natural disasters.

To offset the devastating affects of natural hazards, the HMP was developed under the guidance of the Kings County Fire Department/Kings County Emergency Operations Department. The overall purpose of the HMP was to reduce natural hazard vulnerability and make the communities of Kings County more disaster resistant and sustainable. Development of the HMP involved Kings County, the four incorporated cities (Avenal, Corcoran, Hanford, and Lemoore), and several special districts.

The California Building Code is the regulatory environment for design and construction of building codes and standards covering state and federal land use and environmental regulations which are developed specifically for the purpose of regulating the life safety, health, and welfare of the public.

#### 4.7.2 Impact Analysis

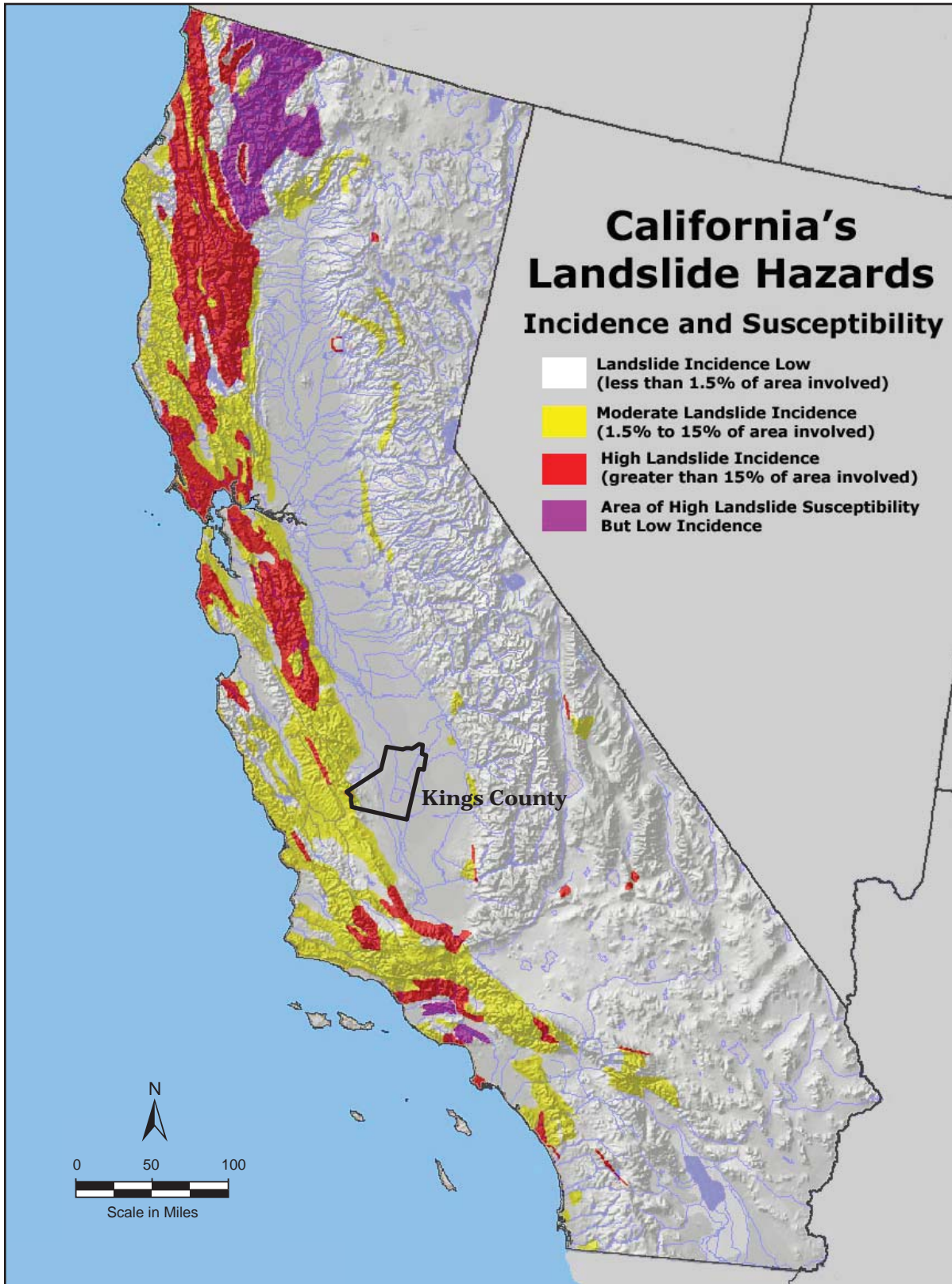
**a. Methodology and Significance Thresholds.** In accordance with the State CEQA Guidelines, a project would result in a significant impact if it would:

- *Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure, including liquefaction, or landslides;*
- *Result in substantial soil erosion or the loss of topsoil;*
- *Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse;*
- *Be located on expansive soil, creating substantial risks to life or property; or*
- *Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.*

Impacts related to septic tanks, seiche, and tsunami are less than significant and are discussed in Section 4.13, *Less than Significant Environmental Factors*. Impacts related to soil erosion are discussed in Section 4.9, *Hydrology and Water Resources*.

Because the location of each of the proposed improvements is different in geologic character, determination of significance is based on an individual study at the time of the project permit application and environmental review. Therefore, for the purposes of this EIR, proposed transportation modifications that are located in areas of moderate to high geologic or soil hazard shall be considered significant.

**b. Project Impacts and Mitigation Measures.** This section describes generalized impacts associated with some of the projects anticipated under the 2014 RTP-SCS.





**Impact G-1** Some proposed 2014 RTP-SCS projects could be at risk from seismic activity. Although fault rupture does not pose a substantial threat in ~~Kings County~~the region, ground-shaking may affect 2014 RTP-SCS projects. This is considered a Class II, *significant but mitigable* impact.

As discussed in Section 4.7.1, *Setting*, ~~Kings County~~the region does not have major fault systems within its boundaries; however, the San Andreas Fault is about four miles west of the Kings County line. The primary hazard due to seismic activity in ~~Kings County~~the region would be ground shaking, with the potential varying from 20-30% g in the northeast third of the county, including the cities of Hanford, Lemoore, Corcoran, and the Santa Rosa Rancheria to 30-40% g in the central part of the county. Earthquake hazards area are more severe in the southeast third of the county and in the City of Avenal, with the potential for ground shaking in this area ranging from 40-50% g to 70-80% g at the southwestern County line.

Valley Zones (V1 through V4) represent areas along the valley floor with highest near-surface amplification identified along the west and decreasing towards the east due to the damping of thick alluvial sediments. Coast Ranges Zones (C1 and C2) represent the Kettleman Hills and Coast Range areas that are closest to the San Andreas Fault, which are anticipated to experience moderately high ground shaking levels. The safest zones correspond generally to the areas of greatest population within the county. Zone V1, the area of least expected seismic shaking, encompasses the cities of Hanford and Lemoore, communities of Armona, Home Garden and Stratford, and Naval Air Station Lemoore residential areas and Santa Rosa Rancheria. Zone V2 contains the City of Corcoran. Kettleman City and Avenal, however, are located within Zone V4 and adjacent to more critical Coast Range Zones.

Bridge-type structures are most susceptible to earthquake groundshaking, although roadways may also be damaged. Bridge work is proposed on Lacey Boulevard at 13<sup>th</sup> Avenue, and projects in Avenal would be located in an area susceptible to intense ground-shaking. ~~In addition, the proposed land use scenario in the 2014 RTP-SCS may facilitate growth in urban areas of Kings County which are subject to moderate to high ground shaking hazards.~~ Potential impacts from ground-shaking would be significant but mitigable.

Mitigation Measures. KCAG shall implement and sponsor agencies can and should implement the following mitigation measure for all transportation projects developed pursuant to the 2014 RTP-SCS that would result in seismic impacts.

**G-1** The project sponsor shall ensure that the structure is designed and constructed to the latest geotechnical standards. This may necessitate site-specific geologic and soils engineering investigations to exceed the code for high groundshaking zones.

Significance After Mitigation. Implementation of the above measure would reduce potential impacts to a less than significant level.



**Impact G-2** Some projects proposed in the 2014 RTP-SCS may be located in areas with low to moderate liquefaction potential, expansive soils, and landsliding hazards. This is considered a Class II, *significant but mitigable impact*.

Construction and operation of some roadways proposed in the 2014 RTP-SCS could be prone to liquefaction hazards. These hazards could be exacerbated through grading associated with transportation projects, and construction of such projects on unconsolidated fill. The nature of these hazards, and their potential impacts, are described below.

*Liquefaction.* Liquefaction potential is widespread throughout the county, as shown on Figure 4.7-2. Nearly all of the county's major roadways and urban centers are located in areas where liquefaction could occur in the event of an earthquake. However, the areas in which the majority of proposed 2014 RTP-SCS projects would occur are primarily located in areas with V1 or V2 (minimal to moderate) liquefaction potential. Nonetheless, nearly all proposed 2014 RTP-SCS projects involving widening or extension could be subject to minimal to moderate liquefaction hazards.

*Expansive Soils.* Expansive soils have a clay content and mineralogy that renders them susceptible to volume increase upon absorption of water and volume decrease upon desiccation. As discussed above in Section 4.7.1.a, clay soils are known to occur throughout ~~Kings County~~ the region. Repeated cycles of wetting and drying of expansive clay soils can cause damage to future roadway projects under the 2014 RTP-SCS.

*Landslide.* ~~Kings County~~ The region has "Low" to "Moderate" risk landslide areas located in remote uninhabited sections of southwest Kings County. Figure 4.7-3 depicts areas that may be susceptible to landslides. The areas potentially susceptible to landslides within ~~Kings County~~ the region are nearly all defined as having "Low" (less than 1.5 percent of area involved) and "Moderate" potential (1.5 to 15 percent of area involved) for landslide incidents. A smaller portion of land within the Coast Ranges, along the southwest corner of the county, is the only area rated to have "High" (Greater than 15 percent of area involved) landslide incident probability. Slope instability may result in landslides, mudslides, or debris flows that can cause damage and disruption to roadway infrastructure. The majority of proposed 2014 RTP-SCS projects are located in areas with "Low" risk for landslides as these projects are located in or near the Cities of Hanford and Lemoore.

The identification of on-site geologic hazards would require the preparation of project-specific geotechnical evaluations for proposed 2014 RTP-SCS projects. Due to the programmatic nature of the 2014 RTP-SCS, such detailed evaluation would only be required upon implementation of a given 2014 RTP-SCS project. The preparation of project-specific geotechnical evaluations prior to implementation of 2014 RTP-SCS projects would identify and evaluate geologic hazards for that particular project site. Generally, the analysis would provide recommendations to prepare sites for development to avoid the identified geologic hazards. Nonetheless, because projects under the proposed 2014 RTP-SCS would potentially be exposed to liquefaction, expansive soils and landsliding hazards, potential impacts would be Class II, *significant but mitigable*.

Mitigation Measures. KCAG shall implement and sponsor agencies can and should implement the following mitigation measure for all transportation projects developed pursuant



to the 2014 RTP-SCS that would reduce potential impacts associated with liquefaction, expansive soils and landsliding.

- G-2(a)** If a 2014 RTP-SCS project is located in an area of moderate to high liquefaction potential, the project sponsor shall ensure that the project is designed based upon appropriate geology, soils and earthquake engineering studies. Possible design measures include deep foundations, removal of liquefiable materials and dewatering.
  
- G-2(b)** If a 2014 RTP-SCS project involves cut slopes over 15 feet in height, the project sponsor shall ensure that specific slope stabilization studies are conducted. Possible stabilization methods include buttresses, retaining walls and soldier piles.
  
- G-2(c)** If a 2014 RTP-SCS project is located in an area of expansive soils, the project sponsor shall ensure that a site-specific investigation and appropriate design factors are implemented. Such design factors could include concrete slabs on grade with increased steel reinforcement, removal of highly expansive material and replacement with non-expansive import fill material, or chemical treatment with hydrated lime to reduce the expansion characteristics of the soils.

Significance After Mitigation. Implementation of Mitigation Measures G-2(a) through G-2(c) would reduce potential impacts to a less than significant level.

**c. Specific RTP-SCS Projects That May Result in Impacts.** All RTP-SCS projects that require the construction of physical structures may result in geologic impacts as discussed in Section 4.7.2.b above and are therefore not mentioned in a table format. Individual projects could create significant impacts related to geology but would not necessarily do so. Additional specific analysis will need to be conducted as the individual projects are implemented in order to determine the actual magnitude of impact. Mitigation measures discussed above could apply to these specific projects.

## 4.8 GREENHOUSE GAS EMISSIONS/CLIMATE CHANGE

This section discusses potential impacts related to greenhouse gas emissions and climate change. Air quality impacts are discussed in Section 4.2, *Air Quality*.

### 4.8.1 Setting

**a. Climate Change and Greenhouse Gases.** Climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans along with other substantial changes in climate (such as wind patterns, precipitation, and storms) over an extended period of time. The term "climate change" is often used interchangeably with the term "global warming," but "climate change" is preferred to "global warming" because it helps convey that there are other changes in addition to rising temperatures. The baseline against which these changes are measured originates in historical records identifying temperature changes that have occurred in the past, such as during previous ice ages. The global climate is continuously changing, as evidenced by repeated episodes of substantial warming and cooling documented in the geologic record. The rate of change has typically been incremental, with warming or cooling trends occurring over the course of thousands of years. The past 10,000 years have been marked by a period of incremental warming, as glaciers have steadily retreated across the globe. However, scientists have observed acceleration in the rate of warming during the past 150 years. Per the United Nations Intergovernmental Panel on Climate Change (IPCC), the understanding of anthropogenic warming and cooling influences on climate has led to a high confidence (90% or greater chance) that the global average net effect of human activities since 1750 has been one of warming. The prevailing scientific opinion on climate change is that most of the observed increase in global average temperatures, since the mid-20th century, is likely due to the observed increase in anthropogenic greenhouse gas concentrations (IPCC, 2007).

Gases that absorb and re-emit infrared radiation in the atmosphere are called greenhouse gases (GHGs). GHGs are present in the atmosphere naturally, are released by natural sources, or are formed from secondary reactions taking place in the atmosphere. The gases that are widely seen as the principal contributors to human-induced climate change include carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxides (N<sub>2</sub>O), and fluorinated gases such as hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs), and sulfur hexafluoride (SF<sub>6</sub>). Water vapor is excluded from the list of GHGs because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation.

GHGs are emitted by both natural processes and human activities. Of these gases, CO<sub>2</sub> and CH<sub>4</sub> are emitted in the greatest quantities from human activities. Emissions of CO<sub>2</sub> are largely by-products of fossil fuel combustion, whereas CH<sub>4</sub> results from off-gassing associated with agricultural practices and landfills. Man-made GHGs, many of which have greater heat-absorption potential than CO<sub>2</sub>, include fluorinated gases and SF<sub>6</sub> (California Environmental Protection Agency [CalEPA], 2006). Different types of GHGs have varying global warming potentials (GWPs). The GWP of a GHG is the potential of a gas or aerosol to trap heat in the atmosphere over a specified timescale (generally, 100 years). Because GHGs absorb different amounts of heat, a common reference gas (CO<sub>2</sub>) is used to relate the amount of heat absorbed to the amount of the gas emissions, referred to as "carbon dioxide equivalent" (CO<sub>2</sub>E), and is the amount of a GHG emitted



multiplied by its GWP. CO<sub>2</sub> has a GWP of one. By contrast, CH<sub>4</sub> has a GWP of 21, meaning its global warming effect is 21 times greater than CO<sub>2</sub> on a molecule per molecule basis (IPCC, 1997).

The accumulation of GHGs in the atmosphere regulates the earth's temperature. Without the natural heat trapping effect of GHG, Earth's surface would be about 34° C cooler (CalEPA, 2006). However, it is believed that emissions from human activities, particularly the consumption of fossil fuels for electricity production and transportation, have elevated the concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations. The following discusses the primary GHGs of concern.

Carbon Dioxide. The global carbon cycle is made up of large carbon flows and reservoirs. Billions of tons of carbon in the form of CO<sub>2</sub> are absorbed by oceans and living biomass (i.e., sinks) and are emitted to the atmosphere annually through natural processes (i.e., sources). When in equilibrium, carbon fluxes among these various reservoirs are roughly balanced (United States Environmental Protection Agency [USEPA], April 2012). CO<sub>2</sub> was the first GHG demonstrated to be increasing in atmospheric concentration, with the first conclusive measurements being made in the last half of the 20<sup>th</sup> century. Concentrations of CO<sub>2</sub> in the atmosphere have risen approximately 40% since the industrial revolution. The global atmospheric concentration of CO<sub>2</sub> has increased from a pre-industrial value of about 280 parts per million (ppm) to 391 ppm in 2011 (IPCC, 2007; National Oceanic and Atmospheric Association [NOAA], 2010). The average annual CO<sub>2</sub> concentration growth rate was larger between 1995 and 2005 (average: 1.9 ppm per year) than it has been since the beginning of continuous direct atmospheric measurements (1960–2005 average: 1.4 ppm per year), although there is year-to-year variability in growth rates (NOAA, 2010). Currently, CO<sub>2</sub> represents an estimated 82.8% of total GHG emissions (Department of Energy [DOE] Energy Information Administration [EIA], August 2010). The largest source of CO<sub>2</sub>, and of overall GHG emissions, is fossil fuel combustion.

Methane. Methane (CH<sub>4</sub>) is an effective absorber of radiation, though its atmospheric concentration is less than that of CO<sub>2</sub> and its lifetime in the atmosphere is limited to 10 to 12 years. It has a global warming potential (GWP) approximately 21 times that of CO<sub>2</sub>. Over the last 250 years, the concentration of CH<sub>4</sub> in the atmosphere has increased by 148% (IPCC, 2007), although emissions have declined from 1990 levels. Anthropogenic sources of CH<sub>4</sub> include enteric fermentation associated with domestic livestock, landfills, natural gas and petroleum systems, agricultural activities, coal mining, wastewater treatment, stationary and mobile combustion, and certain industrial processes (USEPA, April 2012).

Nitrous Oxide. Concentrations of nitrous oxide (N<sub>2</sub>O) began to rise at the beginning of the industrial revolution and continue to increase at a relatively uniform growth rate (NOAA, 2010). N<sub>2</sub>O is produced by microbial processes in soil and water, including those reactions that occur in fertilizers that contain nitrogen, fossil fuel combustion, and other chemical processes. Use of these fertilizers has increased over the last century. Agricultural soil management and mobile source fossil fuel combustion are the major sources of N<sub>2</sub>O emissions. The GWP of N<sub>2</sub>O is approximately 310 times that of CO<sub>2</sub>.

Fluorinated Gases (HFCS, PFCS and SF<sub>6</sub>). Fluorinated gases, such as HFCs, PFCs, and SF<sub>6</sub>, are powerful GHGs that are emitted from a variety of industrial processes. Fluorinated gases are used as substitutes for ozone-depleting substances such as chlorofluorocarbons (CFCs),

hydrochlorofluorocarbons (HCFCs), and halons, which have been regulated since the mid-1980s because of their ozone-destroying potential and are phased out under the Montreal Protocol (1987) and Clean Air Act Amendments of 1990. Electrical transmission and distribution systems account for most SF<sub>6</sub> emissions, while PFC emissions result from semiconductor manufacturing and as a by-product of primary aluminum production. Fluorinated gases are typically emitted in smaller quantities than CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O, but these compounds have much higher GWPs. SF<sub>6</sub> is the most potent GHG the IPCC has evaluated.

**b. Statewide Greenhouse Gas Emissions Inventory.** Worldwide anthropogenic emissions of GHGs were approximately 40,000 million metric tons (MMT) CO<sub>2</sub>E in 2004, including ongoing emissions from industrial and agricultural sources, but excluding emissions from land use changes (i.e., deforestation, biomass decay) (IPCC, 2007). CO<sub>2</sub> emissions from fossil fuel use accounts for 56.6% of the total emissions of 49,000 MMT CO<sub>2</sub>E (includes land use changes) and CO<sub>2</sub> emissions from all sources account for 76.7% of the total. Methane emissions account for 14.3% of GHGs and N<sub>2</sub>O emissions account for 7.9% (IPCC, 2007).

Total U.S. GHG emissions were 6,821.8 MMT CO<sub>2</sub>E in 2009 (USEPA, April 2012). Total U.S. emissions have increased by 10.5 % since 1990; emissions rose by 3.2 % from 2009 to 2010 (USEPA, April 2012). This increase was primarily due to (1) an increase in economic output resulting in an increase in energy consumption across all sectors; and (2) much warmer summer conditions resulting in an increase in electricity demand for air conditioning. Since 1990, U.S. emissions have increased at an average annual rate of 0.5%. In 2010, the transportation and industrial end-use sectors accounted for 32% and 26% of CO<sub>2</sub> emissions from fossil fuel combustion, respectively. Meanwhile, the residential and commercial end-use sectors accounted for 22% and 19% of CO<sub>2</sub> emissions from fossil fuel combustion, respectively (USEPA, April 2012).

Based upon the California Air Resources Board (ARB) California Greenhouse Gas Inventory for 2000-2011, California produced 448 MMT CO<sub>2</sub>E in 2011 (ARB, August 2013). The major source of GHG in California is transportation, contributing 38% of the state's total GHG emissions. Industry is the second largest source, contributing 21% of the state's GHG emissions (ARB, October 2013). California emissions are due in part to its large size and large population compared to other states. However, a factor that reduces California's per capita fuel use and GHG emissions, as compared to other states, is its relatively mild climate. The ARB has projected statewide unregulated GHG emissions for the year 2020 will be 507 MMT CO<sub>2</sub>E (ARB, August 2013). These projections represent the emissions that would be expected to occur in the absence of any GHG reduction actions.

**c. Potential Effects of Climate Change.** Globally, climate change has the potential to affect numerous environmental resources through potential impacts related to future air temperatures and precipitation patterns. Scientific modeling predicts that continued GHG emissions at or above current rates would induce more extreme climate changes during the 21<sup>st</sup> century than were observed during the 20<sup>th</sup> century. Scientists have projected that the average global surface temperature could rise by 1.0-4.5°F (0.6-2.5°C) in the next 50 years, and the increase may be as high as 2.2-10°F (1.4-5.8°C) in the next century. In addition to these projections, there are identifiable signs that global warming is currently taking place, including substantial ice loss in the Arctic (IPCC, 2007).

According to the CalEPA's 2010 *Climate Action Team Biennial Report*, potential impacts of climate change in California may include loss in snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years (CalEPA, April 2010). Below is a summary of some of the potential effects that could be experienced in California as a result of climate change.

Sea Level Rise. According to *The Impacts of Sea-Level Rise on the California Coast*, prepared by the California Climate Change Center (CCCC) (May 2009), climate change has the potential to induce substantial sea level rise in the coming century. The rising sea level increases the likelihood and risk of flooding. The study identifies a sea level rise on the California coast over the past century of approximately eight inches. Based on the results of various climate change models, sea level rise is expected to continue. The California Climate Adaptation Strategy (December 2009) estimates a sea level rise of up to 55 inches by the end of this century.

Air Quality. Higher temperatures, which are conducive to air pollution formation, could worsen air quality in California. Climate change may increase the concentration of ground-level ozone, but the magnitude of the effect, and therefore its indirect effects, are uncertain. If higher temperatures are accompanied by drier conditions, the potential for large wildfires could increase, which, in turn, would further worsen air quality. However, if higher temperatures are accompanied by wetter, rather than drier conditions, the rains would tend to temporarily clear the air of particulate pollution and reduce the incidence of large wildfires, thereby ameliorating the pollution associated with wildfires. Additionally, severe heat accompanied by drier conditions and poor air quality could increase the number of heat-related deaths, illnesses, and asthma attacks throughout the state (CEC, March 2009).

Water Supply. Analysis of paleoclimatic data (such as tree-ring reconstructions of stream flow and precipitation) indicates a history of naturally and widely varying hydrologic conditions in California and the west, including a pattern of recurring and extended droughts. Uncertainty remains with respect to the overall impact of climate change on future water supplies in California. However, the average early spring snowpack in the Sierra Nevada decreased by about 10% during the last century, a loss of 1.5 million acre-feet of snowpack storage. During the same period, sea level rose eight inches along California's coast. California's temperature has risen 1°F, mostly at night and during the winter, with higher elevations experiencing the highest increase. Many Southern California cities have experienced their lowest recorded annual precipitation twice within the past decade. In a span of only two years, Los Angeles experienced both its driest and wettest years on record (California Department of Water Resources [DWR], 2008; CCCC, May 2009).

This uncertainty complicates the analysis of future water demand, especially where the relationship between climate change and its potential effect on water demand is not well understood. The Sierra snowpack provides the majority of California's water supply by accumulating snow during wet winters and releasing it slowly during California's dry springs and summers. Based upon historical data and modeling DWR projects that the Sierra snowpack will experience a 25 to 40% reduction from its historic average by 2050. Climate change is also anticipated to bring warmer storms that result in less snowfall at lower elevations, reducing the total snowpack (DWR, 2008).



Hydrology. As discussed above, climate change could potentially affect: the amount of snowfall, rainfall, and snow pack; the intensity and frequency of storms; flood hydrographs (flash floods, rain or snow events, coincidental high tide and high runoff events); sea level rise and coastal flooding; coastal erosion; and the potential for salt water intrusion. Sea level rise may be a product of climate change through two main processes: expansion of sea water as the oceans warm and melting of ice over land. A rise in sea levels could jeopardize California's water supply due to salt water intrusion. Increased storm intensity and frequency could affect the ability of flood-control facilities, including levees, to handle storm events.

Agriculture. California has a \$30 billion agricultural industry that produces half of the country's fruits and vegetables. Higher CO<sub>2</sub> levels can stimulate plant production and increase plant water-use efficiency. However, if temperatures rise and drier conditions prevail, water demand could increase; crop-yield could be threatened by a less reliable water supply; and greater air pollution could render plants more susceptible to pest and disease outbreaks. In addition, temperature increases could change the time of year certain crops, such as wine grapes, bloom or ripen, and thereby affect their quality (CCCC, 2006).

Ecosystems and Wildlife. Climate change and the potential resulting changes in weather patterns could have ecological effects on a global and local scale. Increasing concentrations of GHGs are likely to accelerate the rate of climate change. Scientists project that the average global surface temperature could rise by 1.0-4.5°F (0.6-2.5°C) in the next 50 years, and 2.2-10°F (1.4-5.8°C) in the next century, with substantial regional variation. Soil moisture is likely to decline in many regions, and intense rainstorms are likely to become more frequent. Rising temperatures could have four major impacts on plants and animals: (1) timing of ecological events; (2) geographic range; (3) species' composition within communities; and (4) ecosystem processes, such as carbon cycling and storage (Parmesan, 2004; Parmesan, C. and H. Galbraith, 2004).

**d. Local Effects of Climate Change.** While the above discussion identifies the possible effects of climate change at a global and potentially statewide level, current scientific modeling tools are unable to predict what local impacts may occur with a similar degree of accuracy. In general, regional and local predictions are made based on downscaling statewide models (CalEPA, April 2010).

**e. Regulatory Setting.** The following regulations address both climate change and GHG emissions.

International and Federal Regulations. The United States is, and has been, a participant in the United Nations Framework Convention on Climate Change (UNFCCC) since it was produced by the United Nations in 1992. The UNFCCC is an international environmental treaty with the objective of, "stabilization of GHG concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system." This is generally understood to be achieved by stabilizing global GHG concentrations between 350 and 400 ppm, in order to limit the global average temperature increases between 2 and 2.4°C above pre-industrial levels (IPCC 2007). The UNFCCC itself does not set limits on GHG emissions for individual countries or enforcement mechanisms. Instead, the treaty provides for updates, called "protocols," that would identify mandatory emissions limits.





Five years later, the UNFCCC brought nations together again to draft the *Kyoto Protocol* (1997). The Kyoto Protocol established commitments for industrialized nations to reduce their collective emissions of six GHGs (CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, SF<sub>6</sub>, HFCs, and PFCs) to 5.2% below 1990 levels by 2012. The United States is a signatory of the Kyoto Protocol, but Congress has not ratified it and the United States has not bound itself to the Protocol's commitments (UNFCCC, 2007). The first commitment period of the Kyoto Protocol ended in 2012. Governments, including 38 industrialized countries, agreed to a second commitment period of the Kyoto Protocol beginning January 1, 2013 and ending either on December 31, 2017 or December 31, 2020, to be decided by the Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol at its seventeenth session (UNFCCC, November 2011).

The United States is currently using a voluntary and incentive-based approach toward emissions reductions in lieu of the Kyoto Protocol's mandatory framework. The Climate Change Technology Program (CCTP) is a multi-agency research and development coordination effort (led by the Secretaries of Energy and Commerce) that is charged with carrying out the President's National Climate Change Technology Initiative (USEPA, December 2007). However, the voluntary approach to address climate change and GHG emissions may be changing. The United States Supreme Court in *Massachusetts et al. v. Environmental Protection Agency et al.* ([2007] 549 U.S. 05-1120) held that the USEPA has the authority to regulate motor-vehicle GHG emissions under the federal Clean Air Act.

EPA and the National Highway Traffic Safety Administration (NHTSA) are taking coordinated steps to enable the production of a new generation of clean vehicles with reduced GHG emissions and improved fuel efficiency from on-road vehicles and engines. This will be done through coordination of the GHG emission limits and the NHTSA Corporate Average Fuel Economy (CAFE) standards. In May 2010, the final combined EPA and NHTSA standards that comprise the first phase of this national program were promulgated regarding passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. The CAFE standards require these vehicles to meet an estimated combined average emissions level of 250 grams of CO<sub>2</sub> per mile, equivalent to 35.5 miles per gallon (mpg) if the automobile industry were to meet this CO<sub>2</sub> level solely through fuel economy improvements. In October 2010, the agencies each proposed complementary GHG and CAFE standards under their respective authorities covering medium and heavy-duty trucks for the model years 2014-2018. In August 2012, new emissions limits and CAFE standards for the 2017 to 2025 model years were promulgated, increasing fuel economy to the equivalent of 54.5 mpg for cars and light-duty trucks.

In October 2009, the USEPA issued a Final Rule for mandatory reporting of GHG emissions for facilities that emit more than 25,000 metric tons (MT) CO<sub>2</sub>E per year. This Final Rule applies to fossil fuel suppliers, industrial gas suppliers, direct GHG emitters, and manufacturers of heavy-duty and off-road vehicles and vehicle engines, and requires annual reporting of emissions. The first annual reports for these sources were due in March 2011. Additionally, the reporting of emissions is required for owners of SF<sub>6</sub>- and PFC-insulated equipment when the total nameplate capacity of these insulating gases is above 17,280 pounds.

On May 13, 2010, the USEPA issued a Final Rule that took effect on January 2, 2011, setting a threshold of 75,000 MT CO<sub>2</sub>E per year for GHG emissions. New and existing industrial facilities

that meet or exceed that threshold will require a permit after that date. On November 10, 2010, the USEPA published the “PSD and Title V Permitting Guidance for Greenhouse Gases.” The USEPA’s guidance document is directed at state agencies responsible for air pollution permits under the Federal Clean Air Act to help them understand how to implement GHG reduction requirements while mitigating costs for industry.

On January 2, 2011, the USEPA implemented the first phase of the Tailoring Rule for GHG emissions Title V Permitting. Under the first phase of the Tailoring Rule, all new sources of emissions are subject to GHG Title V permitting if they are otherwise subject to Title V for another air pollutant and they emit at least 75,000 MT CO<sub>2</sub>E per year. Under Phase 1, no sources were required to obtain a Title V permit solely due to GHG emissions. Phase 2 of the Tailoring Rule went into effect July 1, 2011. At that time new sources were subject to GHG Title V permitting if the source emits 100,000 MT CO<sub>2</sub>E per year, or they are otherwise subject to Title V permitting for another pollutant and emit at least 75,000 MT CO<sub>2</sub>E per year.

On July 3, 2012 the USEPA issued the final rule that retains the GHG permitting thresholds that were established in Phases 1 and 2 of the GHG Tailoring Rule. These emission thresholds determine when Clean Air Act permits under the New Source Review Prevention of Significant Deterioration (PSD) and Title V Operating Permit programs are required for new and existing industrial facilities.

State Regulations. ARB is responsible for the coordination and oversight of state and local air pollution control programs in California. Various statewide and local initiatives to reduce the state’s contribution to GHG emissions have raised awareness about climate change and its potential for severe long-term adverse environmental, social, and economic effects.

Assembly Bill (AB) 1493 (2002), referred to as “Pavley,” requires ARB to develop and adopt regulations to achieve “the maximum feasible and cost-effective reduction of GHG emissions from motor vehicles.” On June 30, 2009, USEPA granted the waiver of Clean Air Act preemption to California for its GHG emission standards for motor vehicles beginning with the 2009 model year. 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. In January 2012, ARB approved a new emissions-control program combining the control of smog, soot causing pollutants and GHG emissions into a single coordinated package of requirements for passenger cars and light trucks model years 2017 through 2025. The Advanced Clean Cars program coordinates the goals of the Low Emissions Vehicles (LEV), Zero Emissions Vehicles (ZEV), and Clean Fuels Outlet programs and would provide major reductions in GHG emissions. By 2025, when the rules would be fully implemented, new automobiles would emit 34% fewer GHGs. Statewide CO<sub>2</sub>E emissions would be reduced by 3% by 2020 and by 12% by 2025. The reduction increases to 27% in 2035 and even further to a 33% reduction in 2050 (ARB, 2013).<sup>1</sup>

In 2005, former Governor Schwarzenegger issued Executive Order (EO) S-3-05, establishing statewide GHG emissions reduction targets. EO S-3-05 provides that by 2010, overall GHG emissions shall be reduced to 2000 levels; by 2020, emissions shall be reduced to 1990 levels; and by 2050, emissions shall be reduced to 80% of 1990 levels (CalEPA, 2006). In response to EO S-3-05,

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<sup>1</sup> Percent reductions are from 2008 baseline emissions levels.



CalEPA created the Climate Action Team (CAT), which in March 2006 published the Climate Action Team Report (the “2006 CAT Report”) (CalEPA, 2006). The 2006 CAT Report identified a recommended list of strategies that the state could pursue to reduce GHG emissions. These are strategies that could be implemented by various state agencies to ensure that the emission reduction targets in EO S-3-05 are met and can be met within the existing authority of the state agencies. The strategies include the reduction of passenger and light duty truck emissions, the reduction of idling times for diesel trucks, an overhaul of shipping technology/infrastructure, increased use of alternative fuels, increased recycling, landfill methane capture, etc.

California’s major initiative for reducing GHG emissions is outlined in Assembly Bill 32 (AB 32), the “California Global Warming Solutions Act of 2006,” signed into law in 2006. AB 32 codifies the statewide goal of reducing GHG emissions to 1990 levels by 2020 (essentially a 15% reduction below 2005 emission levels; the same requirement as under S-3-05), and requires ARB to prepare a Scoping Plan that outlines the main state strategies for reducing GHGs to meet the 2020 deadline. In addition, AB 32 requires ARB to adopt regulations to require reporting and verification of statewide GHG emissions.

After completing a comprehensive review and update process, ARB approved a 1990 statewide GHG level and 2020 limit of 427 MMT CO<sub>2</sub>E. The Scoping Plan was approved by ARB on December 11, 2008, and includes measures to address GHG emission reduction strategies related to energy efficiency, water use, recycling and solid waste, among other measures. The Scoping Plan includes a range of GHG reduction actions that may include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms.

In early 2013, ARB initiated activities to update the AB 32 Scoping Plan. The 2013 Scoping Plan update (Public Review Draft, October 2013) defines ARB’s climate change priorities and sets the groundwork to reach post-2020 goals set forth in EO S-3-05. The update highlights California’s progress toward meeting the “near-term” 2020 GHG emission reduction goals defined in the original Scoping Plan (2008). It also evaluates how to align the state’s longer-term GHG reduction strategies with other state policy priorities, such as for water, waste, natural resources, clean energy, transportation, and land use.

EO S-01-07 was enacted on January 18, 2007. The order mandates that a Low Carbon Fuel Standard (“LCFS”) for transportation fuels be established for California to reduce the carbon intensity of California’s transportation fuels by at least 10% by 2020.

Senate Bill (SB) 97, signed in August 2007, acknowledges that climate change is an environmental issue that requires analysis in California Environmental Quality Act (CEQA) documents. In March 2010, the California Resources Agency (Resources Agency) adopted amendments to the State CEQA Guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions. The adopted guidelines give lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHGs and climate change impacts.

ARB Resolution 07-54 establishes 25,000 metric tons of GHG emissions as the threshold for identifying the largest stationary emission sources in California for purposes of requiring the

annual reporting of emissions. This threshold is just over 0.005% of California's total inventory of GHG emissions for 2004.

Senate Bill (SB) 375, signed in August 2008, enhances the state's ability to reach AB 32 goals by aligning transportation planning and funding, land use planning and State housing mandates at the Metropolitan Planning Organization (MPO) level in order to reduce VMT and transportation-related GHG emissions. As discussed in Section 2.0, Project Description, as mandated by ARB, KCAG must reduce 2005 levels of per capita GHG emissions from passenger vehicles in order to meet the SB 375 target. For the KCAG region, the targets set by ARB are a 5% reduction by 2020 and 10% reduction by 2035. The SB 375 target is discussed further in the methodology section below.

In early 2010, ARB adopted a regulation for reducing SF<sub>6</sub> emissions from electric power system gas-insulated switchgear (17 CCR 95350). The regulation requires owners of such switchgear to: (1) annually report SF<sub>6</sub> emissions; (2) determine the emission rate relative to the SF<sub>6</sub> capacity of the switchgear; (3) provide a complete inventory of all gas-insulated switchgear and their SF<sub>6</sub> capacities; (4) produce a SF<sub>6</sub> gas container inventory; and (5) keep all information current for CARB enforcement staff inspection and verification. Changes to relevant facilities owned by PG&E and any gas insulated switchgear associated with the project would be subject to this regulation.

The California Renewables Portfolio Standards (RPS) pursuant to SB 1038, SB 1078, SB 1250, and SB 107 previously required investor-owned utilities, electric service providers, and community choice aggregators to increase the portion of energy that comes from renewable sources to 20% by 2010. Subsequently, in April 2011, Governor Brown signed SB 2X requiring California to generate 33% of its electricity from renewable energy by 2020.

For more information on the Senate and Assembly bills, Executive Orders, and reports discussed above, and to view reports and research referenced above, please refer to the following websites: [www.climatechange.ca.gov](http://www.climatechange.ca.gov) and [www.arb.ca.gov/cc/cc.htm](http://www.arb.ca.gov/cc/cc.htm).

Local Regulations and CEQA Requirements. Pursuant to the requirements of SB 97, the Resources Agency has adopted amendments to the State CEQA Guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions. The adopted CEQA Guidelines provide general regulatory guidance on the analysis and mitigation of GHG emissions in CEQA documents, but contain no suggested thresholds of significance for GHG emissions. Instead, they give lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHGs and climate change impacts. The general approach to developing a Threshold of Significance for GHG emissions is to identify the emissions level for which a project would not be expected to substantially conflict with existing California legislation adopted for the purpose of reducing statewide GHG emissions sufficiently to move the state towards climate stabilization. If a project would generate GHG emissions above the threshold level, its contribution to cumulative impacts would be considered significant. To date, the Bay Area Air Quality Management District (BAAQMD), the South Coast Air Quality Management District (SCAQMD), the San Luis Obispo Air Pollution Control District (SLOAPCD), and the San Joaquin Air Pollution Control District (SJVAPCD) have adopted quantitative significance thresholds for GHGs. However, in March 2012 the Alameda County Superior Court (California Building

Industry Association v. Bay Area Air Quality Management District) issued a judgment finding that the BAAQMD had failed to comply with CEQA when it adopted the thresholds contained in the BAAQMD's 2010 CEQA Guidelines.<sup>2</sup>

*San Joaquin Valley Air Pollution Control District (SJVAPCD) Guidance.* SJVAPCD issued guidance that was adopted on December 17, 2009 for addressing greenhouse gas in CEQA documents. The SJVAPCD proposes a threshold based on implementing predetermined best performance standards that would reduce emissions by an amount consistent with AB 32 targets. The guidance for land use projects is intended to assist local agencies. Local agencies are not required to use the SJVAPCD thresholds. Under the SJVAPCD proposal, projects requiring project specific environmental review would be evaluated according to a Best Performance Standards (BPS) approach. Projects complying with the greenhouse gas emission reduction requirements established as BPS would not require project specific quantification of greenhouse gas emissions and would be determined to have a less than significant individual and cumulative impact for greenhouse gas emissions. Projects not complying with greenhouse gas emission reduction requirements established as BPS would require quantification of project specific greenhouse gas emissions. To be determined to have a less than significant individual and cumulative impact on global climate change, project specific greenhouse gas emissions have to be reduced or mitigated by 29 percent from Business-as-Usual greenhouse gas emissions. Projects requiring preparation of an Environmental Impact Report would require quantification of project specific greenhouse gas emissions. Projects implementing BPS or achieving at least a 29 percent greenhouse gas emission reduction compared to Business-as-Usual would be determined to have a less than significant individual and cumulative impact for greenhouse gas emissions. The SJVAPCD is currently undergoing a public process of quantifying emission reductions for measures comprising BPS. A list of interim GHG Emission Reduction Measures for land use development projects have been approved by the SJVAPCD while the final BPS are being prepared and approved.

*Regional Climate Action Plan.* The Kings County Community-Wide Greenhouse Gas Emissions Inventory was prepared by the SJVAPCD in April 2013 to identify the major sources and quantities of GHG emissions produced county-wide in 2005 and forecast how emissions may change over time. Following the inventory, KCAG facilitated preparation of Regional Climate Action Plan through grant funding provided by the State of California. The Regional Climate Action Plan sets goals and targets on the reduction of GHG emissions, and outlines policies to help achieve those goals. To date, the cities of Avenal and Hanford have participated in the development of the Regional Climate Action Plan but have not adopted the plan. Baseline and projected 2020 GHG emissions from the Regional Climate Action Plan are show in Table 4.8-1 below. Although not participating in the Regional Climate Action Plan, other jurisdictions within the Kings County region have also made efforts to reduce GHG emissions.

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<sup>2</sup> In August 2013, the First District Court of Appeal overturned the trial court and held that the thresholds of significance adopted by the BAAQMD were not subject to CEQA review. However, no guidance by the BAAQMD as to the use of the adopted thresholds has been issued as of October 25th, 2013.



**Table 4.8-1  
 Existing and Projected GHG Emissions Reported in the Regional Climate Action Plan**

Type	Participating Jurisdictions	Annual 2005 Baseline Emissions (MT CO <sub>2</sub> E)	Projected 2020 Business-as-Usual Annual Emissions (MT CO <sub>2</sub> E)	Date
Regional Climate Action Plan	Avenal, Hanford	1,046,804	1,187,184	Draft March 2014

The Regional Climate Action Plan addresses issues related to emissions produced by transportation, energy usage, and waste management. For the KCAG region, transportation and energy usage produce a majority of GHG emissions. Policies included in the Regional Climate Action Plan establish a needed framework for improved circulation networks and energy conservation. Transportation policies aim to reduce VMT by offering more opportunities for alternative transportation modes, such as bicycling and transit use. In addition, many of the policies to promote transit oriented development. Future residents in these developments will have close access to frequent local transit. In order to reduce emissions caused from energy usage, the Regional Climate Action Plan establishes policies for the cities of Avenal and Hanford that will provide energy efficiency for both residential and commercial land uses including programs to improve energy efficiencies in old and new buildings and decrease the use of fossil fuels by providing incentives for renewable energy sources.

#### 4.8.2 Impact Analysis

**a. Methodology and Significance Thresholds.** Pursuant to the requirements of SB 97, the Resources Agency adopted amendments to the *State CEQA Guidelines* for the feasible mitigation of GHG emissions or the effects of GHG emissions in March 2010. These guidelines are used in evaluating the cumulative significance of GHG emissions from the proposed project. According to the adopted *CEQA Guidelines*, impacts related to GHG emissions from the proposed project would be significant if the project would:

- *Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; and/or*
- *Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.*

The vast majority of individual projects do not generate sufficient GHG emissions to create a project-specific impact through a direct influence to climate change; therefore, the issue of climate change typically involves an analysis of whether a project’s contribution towards an impact is cumulatively considerable. “Cumulatively considerable” means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects (CEQA Guidelines, Section 15355).

For future projects, the significance of GHG emissions may be evaluated based on locally adopted quantitative thresholds, or consistency with a regional GHG reduction plan (such as a Climate Action Plan). In December 2009, the SJVAPCD published a final staff report addressing GHG emissions impacts under CEQA. Based on the SJVAPCD thresholds, a project is considered to be less than significant pursuant to CEQA if it complies with an adopted statewide, regional, or



local plan for reduction of mitigation of GHG emissions, complies with SJVAPCD approved Best Performance Standards, or achieves AB 32 targeted GHG emissions reductions (29%) compared to the business-as-usual scenario. The SJVAPCD threshold is designed to be implemented for stationary source and land-use development projects. In addition, the thresholds are intended to encompass project emissions from all sectors, including transportation, residential, commercial, water, etc. Since the RTP-SCS is neither a stationary source nor a land-use development project and will primarily result in transportation-related emissions, the SJVAPCD thresholds are not applicable for the purposes of this analysis. As a result, this section uses three thresholds of significance: increase in per capita GHG emissions compared to baseline conditions (defined as the emissions inventory for 2013), conflict with AB 32 or SB 375 GHG emission reduction targets, and conflict with applicable local GHG reduction plans. These thresholds are also consistent with the CEQA Guidelines.

For the greenhouse gas emissions impacts resulting from the proposed plan, this analysis evaluates potential impacts against both (1) a forecast future baseline condition and (2) current, existing baseline conditions, controlling for impacts caused by population growth and other factors that would occur whether or not the proposed plan is adopted. The year 2013 is used as the EIR baseline, as it is the most recent year for which accurate county-wide VMT data is available. If county-wide per capita GHG emissions associated with the proposed plan do not significantly exceed the 2013 baseline, impacts related to GHG emissions would not be significant.

The SB 375-based threshold is also included as it demonstrates KCAG's achievement of ARB-specified targets and consistency toward achieving the goals of AB 32. For the KCAG region, the targets set by ARB are 5% below 2005 baseline levels by 2020 and 10% below 2005 baseline levels by 2035. In 2005, GHG emissions from passenger vehicles in the KCAG region were approximately 10.5 pounds of CO<sub>2</sub>e per capita. Therefore, KCAG must reduce these levels in order to meet the target. If county-wide GHG emissions associated with the 2014 RTP-SCS do not exceed 10.0 pounds CO<sub>2</sub>e per capita in 2020 or 9.5 pounds CO<sub>2</sub>e per capita in 2035, the plan would meet the mandate of SB 375 and be consistent with the overall 2020 emission reduction targets of AB 32. As shown in Table 4.9-2 below, with the RTP-SCS the GHG per capita emissions from passenger vehicles were modeled for the plan area to be 10.0 pounds per day in 2020 (a reduction of 5 percent from 2005) and 9.2 pounds per day in 2035 (a reduction of 13 percent from 2005). Therefore, implementation of the proposed plan would help the region achieve its SB 375 reduction targets.

The 2050 Executive Order S-3-05 emissions reduction target was not used as a threshold of significance because the Executive Order is stated as a "goal" rather than an adopted GHG reduction plan within the meaning of CEQA Guidelines Section 15064.4(b)(2), and furthermore, the 2050 target is well beyond the horizon year (2040) of the RTP-SCS. Although the Attorney General has advised that the Executive Order 2050 target can inform CEQA analysis, there is no requirement to use it as a threshold of significance. Further, the proposed plan, in meeting its SB 375 target, is in line with the goals of the Executive Order. The RTP-SCS was developed to meet the goals of SB 375, which require that KCAG must reduce 2005 levels of per capita GHG emissions from passenger vehicles by 5% by 2020 and 10% by 2030. In the future when the plan has a planning horizon to 2050 or beyond, compliance with S-3-05 will be evaluated.



*Construction Emissions.* Although construction activity is addressed in this analysis, the California Air Pollution Control Officer Association (CAPCOA) does not discuss whether any of the suggested threshold approaches adequately address impacts from temporary construction activity. As stated in the *CEQA and Climate Change* white paper, “more study is needed to make this assessment or to develop separate thresholds for construction activity” (CAPCOA, 2008).

Additionally, Kings County does not include any construction-related standards. Construction-related emissions are speculative at the RTP-SCS level because such emissions are dependent on the characteristics of individual development projects. However, because construction of the RTP-SCS would generate temporary GHG emissions primarily due to the operation of construction equipment and truck trips, a qualitative analysis is provided below.

KCAG Methodology for Estimating GHG Emissions. Two basic quantities are required to calculate a given emissions estimate: an emission factor and an activity factor. In general, the emission factor is the amount of emissions generated by a certain amount of motor vehicle activity. A county-wide on-road mobile source emission estimate was calculated by summing the product of the vehicle activity (VMT and trips) generated by the land use pattern and transportation projects envisioned in the SCS (the preferred land use and transportation scenario as modeled by KCAG) and the emissions factors contained in the California Air Resources Board’s Emission Factors (EMFAC) 2011. The EMFAC 2011 model generates an output of carbon dioxide (CO<sub>2</sub>) emissions, which were used as the overall indicator of greenhouse gas emissions, per the recommendations of the ARB SB 375 Regional Targets Advisory Committee. In order to calculate the CO<sub>2</sub> emissions within EMFAC 2011, VMT, vehicle trips, and VMT by speed class distributions were extracted from the KCAG Model Improvement Program (MIP) Travel Demand Model for the baseline (2005 and 2013) and each of the target years based on the preferred and alternative transportation/~~land use~~ scenarios. The projected VMT were revised by applying off model adjustments designed to capture reductions in VMT not reflected in the transportation modeling. This adjusted VMT was then entered into the EMFAC 2011 model. The CO<sub>2</sub> emissions associated with vehicle starts are accounted for in the EMFAC 2011 model based on the distribution of vehicle starts by vehicle classification, vehicle technology class, and operating mode. EMFAC 2011 adds these vehicle starts to the running emissions to compute total on-road mobile source emissions. The CO<sub>2</sub> emissions for the vehicle classes were then extracted from the EMFAC 2011 output and reported. Per capita emissions rates were calculated by dividing total CO<sub>2</sub> emissions for each scenario by the region’s population (provided by KCAG) in each respective year.

**b. Project Impacts and Mitigation Measures.** Implementation of the 2014 RTP-SCS could generate GHG emissions which could exceed existing levels and potentially conflict with applicable plans and policies.

**Impact GHG-1 Construction of the transportation improvement projects and ~~future land use patterns~~ envisioned by the 2014 RTP-SCS would generate temporary short-term GHG emissions. Impacts would be Class II, significant but mitigable.**

Construction activities associated with transportation improvement projects and ~~future land use patterns~~ envisioned by the proposed plan would generate temporary short-term GHG emissions primarily due to the operation of construction equipment and truck trips.





Construction-related emissions are speculative at the plan level because such emissions are dependent on the characteristics of individual development projects. However, GHG emissions would be emitted from travel to and from the worksite and the operation of construction equipment such as graders, backhoes, and generators. Site preparation and grading typically generate the greatest amount of emissions due to the use of grading equipment and soil hauling. The precise construction timing and construction equipment for individual projects is not specifically known at this time. Nonetheless, construction activities would result in GHG emissions. Impacts would be potentially significant.

Mitigation Measures. The following mitigation measures are recommended by KCAG to reduce, minimize or avoid significant adverse environmental impacts. Sponsor agencies can and should implement the following mitigation measures for applicable transportation projects to minimize GHG emissions. Project-specific environmental impacts may require these mitigation measures be revised or expanded in response to site-specific conditions.

- Impact GHG-1** The project sponsor shall ensure that applicable GHG-reducing diesel particulate and NO<sub>x</sub> emissions measures for off-road construction vehicles are implemented during construction. The measures shall be noted on all construction plans and the project sponsor shall perform periodic site inspections. Applicable GHG-reducing measures include the following.
- Use of diesel construction equipment meeting ARB's Tier 2 certified engines or cleaner off-road heavy-duty diesel engines, and comply with the State Off-Road Regulation;
  - Use of on-road heavy-duty trucks that meet the ARB's 2007 or cleaner certification standard for on-road heavy-duty diesel engines, and comply with the State On-Road Regulation;
  - All on and off-road diesel equipment shall not idle for more than 5 minutes. Signs shall be posted in the designated queuing areas and or job sites to remind drivers and operators of the 5 minute idling limit;
  - Use of electric equipment in place of diesel-powered equipment, where feasible;
  - Substitute gasoline-powered in place of diesel-powered equipment, where feasible;
  - Use of alternatively fueled construction equipment, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane or biodiesel, in place of diesel powered equipment for 15 percent of the fleet;
  - Use of materials sources from local suppliers; and
  - Recycling and reuse of at least 50 percent of construction waste materials.

Significance after Mitigation. With the implementation of the above mitigation, impacts related to short-term GHG emissions would be less than significant.



**Impact GHG-2 Implementation of the 2014 RTP-SCS would result in a decrease in GHG emissions compared to both 2013 baseline and future ‘no project’ conditions. Impacts would be Class III, less than significant.**

Projected GHG emissions on the KCAG transportation network for the year 2040 under the proposed plan were compared to the 2013 baseline and with the GHG emissions projected under the future ‘no build scenario’, a scenario in which the transportation improvements identified in the proposed plan are not implemented through the year 2040. As discussed above, GHG emissions for the proposed plan were calculated using the CARB’s EMFAC 2011 model based on the VMT that would be generated as a result of the proposed plan (refer to Section 4.12, *Transportation and Circulation*). Table 4.8-2 summarizes the plan’s per-capita transportation-related emissions from all vehicles classes. An analysis of all vehicle classes is provided to determine the significance of total per-capita GHG emissions in accordance with the CEQA Guidelines. As such, if the 2014 RTP-SCS does not result in a significant increase in GHG emissions, impacts would be less than significant. This is independent of the SB 375 analysis and regional targets for per-capita transportation emissions from passenger vehicles, which are analyzed under Impact GHG-3 below.

**Table 4.8-2  
 Per Capita Carbon Dioxide Emission Comparison:  
 All Vehicle Classes**

<b>Scenario</b>	<b>CO<sub>2</sub> Emissions (lbs/day)</b>
2013 EIR Baseline	20.39
2040 No Build Scenario	20.27
2040 with 2014 RTP-SCS	20.26

*The on-road mobile source CO<sub>2</sub> emissions estimates for the 2014 RTP-SCS were calculated using CARB’s EMFAC2011 emission inventory model.*

As shown in Table 4.8-2, implementation of the proposed 2014 RTP-SCS would result in a decrease in GHG emissions compared to the 2013 baseline and the ‘no build scenario.’ The 2013 per capita GHG emissions were estimated for the plan area to be 20.39 pounds per day. With the proposed plan, the 2040 GHG per capita emissions were modeled for the plan area to be 20.26 pounds per day, a decrease of 0.6 percent from the 2013 EIR baseline. In addition, as shown in Table 4.8-2, in the year 2040 GHG emissions under the ‘no build scenario’ would be higher than the proposed RTP-SCS. It is important to note that transportation related GHG emissions would continue to occur throughout the County regardless of whether the proposed plan is adopted. As demonstrated above, the proposed plan would contribute to an overall reduction in transportation related emissions compared to the 2013 EIR baseline and ‘no build scenario.’

As previously discussed, the AB 32 Scoping Plan outlines the main State strategies for reducing GHGs to meet the 2020 target. Many of these strategies contribute to reductions from transportation-related emissions at the regional and local levels. The projections discussed above do not include any additional measures from the Scoping Plan to further reduce GHG emissions and are, therefore, conservative. Application of Pavley fuel efficiency standards and



low carbon fuel standards, both Scoping Plan measures, are anticipated to reduce levels even further. Implementation of the 2014 RTP-SCS would help the region reduce per capita greenhouse gas emissions. Impacts would be less than significant.

In addition to the vehicle GHG emissions shown in Table 4.8-2, projects envisioned by the proposed plan would also result in GHG emissions due to electricity and natural gas consumption. However, it is important to note that residential and commercial growth is not directly attributed to the proposed plan. This growth is anticipated to occur in the region regardless of whether the proposed RTP-SCS is adopted. KCAG does not propose any land use changes, but rather the land use patterns envisioned by the RTP-SCS are based on the General Plan land use and zoning designations of the local agencies (the four incorporated cities and the county). The RTP-SCS would be consistent with the land use and zoning designations in the incorporated and unincorporated areas. However, in addition to other strategies, the proposed plan redistributes growth within the region to focus growth within existing urban areas. As a result, this land use scenario would result in fewer and shorter vehicle trips, which would result in fewer overall GHG emissions when compared to a traditional land use pattern. Impacts would be less than significant.

Mitigation Measures. None required.

Significance after Mitigation. Impacts are less than significant.

**Impact GHG-3 Implementation of the 2014 RTP-SCS would not interfere with the GHG emissions reduction goals of AB 32 or SB 375. Impacts would be Class III, less than significant.**

One of the goals of SB 375 is to reach the GHG emissions reduction targets for passenger vehicles set by CARB through an integrated land use, transportation, and housing plan. Achievement of this goal is an objective of the proposed plan. For the KCAG region, the targets set by CARB are a 5% reduction by 2020 and 10% reduction by 2035. Table 4.8-3 summarizes the plan’s per capita transportation-related emissions from passenger vehicles.

**Table 4.8-3  
 Per Capita Carbon Dioxide Emission Comparison: Passenger Vehicles**

Scenario	Household Population	Per Capita CO <sub>2</sub> Emissions (lbs/day)	Percent Change from 2005
2005 Baseline	144,601	10.51	NA
2013 EIR Baseline	161,400	10.19	3.04%
2020 Blueprint Scenario (with 2014 RTP-SCS)	181,049	9.97	5.14%
2035 Blueprint Scenario (with 2014 RTP-SCS)	223,112	9.24	12.08%
2040 No Build Scenario	237,194	9.18	12.57%
2040 Blueprint Scenario (with 2014 RTP-SCS)		9.17	12.75%

*The on-road mobile source CO<sub>2</sub> emissions estimates for the 2014 RTP-SCS were calculated using CARB’s EMFAC2011 emission inventory model.*

As shown in Table 4.8-3, the 2005 GHG per capita emissions from passenger vehicles were estimated for the plan area to be 10.51 pounds per day. With the proposed RTP-SCS, the 2020



GHG per capita emissions were modeled for the plan area to be 9.97 pounds per day, a decrease of 5.14 percent from 2005, and the 2035 emissions levels were modeled to be 9.24 pounds per day, a decrease of 12.08 percent from 2005. With the proposed plan, the 2040 GHG per capita emissions from passenger vehicles were modeled for the plan area to be 9.17 pounds per day, a reduction of 12.75 percent from 2005. In addition, as shown in Table 4.8-3, in the year 2040 projected passenger vehicle GHG emissions under the 'no build scenario' would be the same or higher when compared to GHG emissions under the proposed plan. It is important to note that passenger vehicle related GHG emissions would continue to occur throughout the County regardless of whether the proposed plan is adopted. As demonstrated above, the proposed plan would contribute to an overall reduction in passenger vehicle related emissions.

These projections do not include any additional measures from the Scoping Plan to further reduce passenger vehicle GHG emissions and are, therefore, conservative. Application of Pavley fuel efficiency standards and low carbon fuel standards, both Scoping Plan measures, are anticipated to reduce levels even further. Implementation of the 2014 RTP-SCS would reduce passenger vehicle GHG emissions compared to the 2013 baseline and future 'no build scenario'. Implementation of the proposed plan would help the region achieve its SB 375 and the State achieve its AB 32 GHG emissions reduction targets. Therefore, impacts would be less than significant.

Mitigation Measures. None required.

Significance after Mitigation. Impacts are less than significant.

**Impact GHG-4 Implementation of the 2014 RTP-SCS would not interfere with the goals of applicable GHG reduction plans and policies, including AB 32 and SB 375. Impacts would be Class III, less than significant.**

As discussed in Impact GHG-3 above, the proposed plan was determined to be consistent with the goals of AB 32. The projects, ~~policies, and land use scenarios~~ and policies identified in the proposed plan are designed to align transportation and land use planning to reduce VMT and transportation-related GHG emissions. Implementation of the proposed plan would help the region achieve its SB 375 GHG emissions reduction target, therefore contributing to the state's overall GHG emissions reduction goals identified in AB 32. Since the proposed plan is consistent with the goals of AB 32, it would not conflict with the goals of local reduction plans designed to meet the same state goals. To date, no local climate action plans have been adopted in ~~the region~~ Kings County. Impacts would be less than significant.

Mitigation Measures. None required.

Significance after Mitigation. Impacts are less than significant.

**c. Specific RTP Projects That May Result in Impacts.** All proposed projects listed in Section 2.0, *Project Description*, would have the potential to result in GHG emissions. However, the proposed plan as a whole is designed to reduce VMT and per capita transportation-related GHG emissions in accordance with SB 375 and AB 32. Since plan level emissions meet KCAG's SB 375 targets, all planned 2014 RTP-SCS projects remain below the thresholds of significance.



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## 4.9 HYDROLOGY and WATER RESOURCES

### 4.9.1 Setting

**a. Watershed and Water Resources.** The County is part of a hydrologic system referred to as the Tulare Lake Basin. The County is divided into three main hydrologic subareas: the northern alluvial fan and basin area (near the Kings, Kaweah, and Tule rivers and their distributaries), the Tulare Lake Zone, and the southwestern uplands (including the areas west of the California Aqueduct and Interstate 5). The alluvial fan/basin subarea is characterized by southwest to south flowing rivers, creeks, and irrigation canal systems that convey surface water from the Sierra Nevada to the west toward the Tulare Lake Bed. The dominant hydrologic features in the alluvial fan/basin subarea are the Kings, Kaweah, and Tule rivers and their major distributaries.

The Pine Flat Dam east of Fresno regulates the Kings River, which is the primary source of irrigation water for the area. The Kings River provides irrigation water to more than one million acres of agricultural land in Fresno, Tulare, and Kings Counties. Historically, much of the southern San Joaquin Valley drained to the historic Tulare Lake Basin, and the basin remains one of internal drainage (i.e., no streams or rivers flow out of the basin). In the event of extreme rainfall and flooding of the basin, surface water would flow north from the basin to the San Joaquin River.

The southwestern upland area represents the eastern extension of the Coast Ranges into the valley, and is characterized by northwest to southeast trending valleys and ridges. The ridge tops within this subarea reach elevations of up to 3,500 feet National Geodetic Vertical Datum (NGVD) in the western portion of the County. In contrast, the lowest elevation of the lake bed is approximately 175 feet NGVD. In general, surface water drainage from the upland subarea flows toward the valley to the east (Kings County Dairy Element EIR, 2003).

Groundwater. The County can be divided into three groundwater subbasins, similar to the surface water hydrologic subareas discussed above, based on the hydrogeologic characteristics of the subsurface. The three subbasins include: 1) the northern alluvial fan and basin deposits, 2) the central and southeast lacustrine and marsh deposits (Tulare Lake Bed), and 3) the southwestern uplands.

*Alluvial Fan and Basin Deposits/Lacustrine and Marsh Deposits.* The main difference between these two sub-basins is the near-surface hydrogeology. The alluvial fan sub-basin near-surface geology is characterized by a heterogeneous mixture of poorly sorted clay, silt, sand, and gravel, and in 1989, depth to first groundwater was measured to range from approximately 2.8 to 16.1 feet below the surface. The Tulare Lake Bed sub-basin near-surface geology is characterized by silt and clay deposits with a minor amount of sand. In both sub-basins, shallow groundwater occurs in unconfined or semi-confined water-bearing zones, while deeper groundwater is confined. The shallow and deep aquifers are separated by the E clay, a laterally extensive clay layer within the Corcoran Clay Member of the Tulare Formation. The E clay is the most extensive lacustrine clay in the entire Central Valley, covering an area of approximately 5,000 square miles. The shallow water-bearing zone is composed of alternating layers of silt, clay, and sand.



Groundwater occurs at various depths within the shallow zone, since partially-confining clay layers or lenses occur throughout. In the Tulare Lake Bed subbasin, water levels stabilize in wells installed to depths of 20, 56, 103, and 200 feet at 9.1, 15.7, 28.3, and 54.6 feet below the surface, respectively (Kings County General Plan Dairy Element EIR, 2003). The deeper aquifer (below the E clay) is confined and, therefore, groundwater is under hydraulic pressure in this zone. Water rises up into wells installed in the deep aquifer to a level of approximately 150 to 200 feet below the ground surface.

*Southwestern Uplands.* In general, groundwater supplies are limited in the southwestern upland sub-area. The relatively small valleys are isolated from surface water recharge; no major rivers or creeks flow through the sub-area. In addition, the uplands are located on the eastern side of the Coast Range, and therefore experience a “rain shadow” effect. The area receives approximately six inches of rainfall per year, which does not provide a substantial amount of recharge to the aquifers in the isolated valleys (e.g., the Kettleman Plains and Sunflower Valley) (Kings County General Plan Dairy Element EIR, 2003).

**b. Water Quality.** The quality of surface and ground water within the County is affected by land uses within the watershed and the composition of subsurface geologic materials. The State Water Resources Control Board (SWRCB) and Regional Water Quality Control Board (RWQCB) regulate water quality in surface and ground water bodies. Kings County and the four incorporated cities are under the jurisdiction of the Central Valley RWQCB, which is responsible for implementation of State and Federal water quality protection guidelines. The RWQCB implements the Water Quality Control Plan for the Tulare Lake Basin (Basin Plan), a master policy document for managing water quality issues in the region.

Surface Water Quality. Stormwater flowing over roadways and other transportation facilities can carry pollutants through natural drainage systems or man-made storm drain facilities to rivers, streams, and lakes and contribute to poor surface water quality. Such discharges are referred to as “non-point” sources because the pollutants are found everywhere. These discharges are mostly unregulated. Pollutants contained within urban runoff primarily include suspended solids, oil, grease, pesticides, and pathogens. Stormwater can also carry pollutants such as pesticides, fertilizers, and animal waste from agricultural operations into surface water bodies.

Under section 303(d) of the Clean Water Act, states are required to develop lists of water bodies that do not meet water quality standards, called “impaired” waters. Table 4.9-1 shows the water bodies in Kings County that are listed as impaired by the SWRCB. As shown in the table, three water bodies have been listed. The most effective way to reduce the level of contamination from surface runoff is through the control of pollutants prior to their discharge to the drainage system. Implementation of point source controls has led to substantial increases in the level of treatment and quality of discharges.



**Table 4.9-1  
 Kings County Water Bodies Listed as Impaired**

Water Body	Impairment Constituent
Cross Creek (Kings and Tulare Counties)	Unknown Toxicity
Kings River, Lower (Pine Flat Reservoir to Island Weir)	Chlorpyrifos, Unknown Toxicity
Kings River, Lower (Island Weir to Stinson and Empire Weirs)	Electrical Conductivity, Molybdenum, Toxaphene

*Source: State Water Resources Control Board, 2010 Integrated Report, 303(D) Listed Waters.  
[http://www.waterboards.ca.gov/water\\_issues/programs/tmdl/integrated2010.shtml](http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml)*

Groundwater Quality. The groundwater basin in the Kings County portion of the San Joaquin Valley is an internally drained and closed basin. It has no appreciable surface or subsurface outflow, except in extremely wet years. Salts (generally measured as total dissolved solids [TDS]) are introduced into the basin with imported water supplies. Although the water may leave the basin by evaporation or evapotranspiration, the majority of the salts stay behind, potentially leading to a build-up of salt in the soil and groundwater. Excessive salt loading can result in a degraded water supply, particularly if concentrations exceed the Secondary Drinking Water standard of 500 mg/L. Salt loading of managed groundwater basins is an important issue throughout the San Joaquin Valley. In addition, many of the naturally occurring deposits within the County are of marine origin and, therefore, have high salt content.

The distribution of TDS and trace elements in the Tulare Lake Basin was assessed by the U.S. Geological Survey (USGS) to evaluate potential problems associated with disposal of irrigation drain water containing elevated levels of selenium and other trace elements. In 1983, deformities of embryos and young waterfowl associated with elevated selenium concentrations were discovered at Kesterson Reservoir in Fresno County. The concern was that the disposal of irrigation drain water into evaporation ponds of the Tulare Lake Basin (the same practice employed at Kesterson) could concentrate the trace elements to levels that could be harmful to wildlife.

The results of the USGS study regarding TDS indicates that much of the shallow groundwater in the Tulare Lake Bed and alluvium/basin areas contains elevated levels of TDS, far in excess of the EPA's secondary drinking water standard of 500 mg/L. In general, water quality improves with depth. The deeper confined aquifer below the E-clay layer has been reported to contain water with TDS levels ranging from 179 to 569 mg/L. Additional analysis of shallow groundwater quality was conducted during the evaluation of environmental effects of the evaporation ponds northeast of Corcoran operated by the Tulare Lake Drainage District (TLDD). Water quality data collected from the tile drains and shallow monitoring wells in the vicinity of the TLDD evaporation ponds indicate that the perched (uppermost) groundwater in the central portion of the Tulare Lake Bed exceeds drinking water quality standards for total dissolved solids (and electrical conductivity), sulfate, chloride, and other constituents. The findings presented in the RWQCB 1993 Waste Discharge Requirements (WDR) for the TLDD evaporation ponds included a determination (#32) that the perched groundwater in the vicinity (within one mile) of the ponds "cannot be used for municipal or domestic supply without extensive treatment" and "is therefore not expected to supply a public water system." Finding #31 suggests that groundwater within the Tulare Lake Basin with total dissolved solids (TDS)





concentration in excess of 3,000 mg/L is not suitable as a drinking water supply (Kings County General Plan Dairy Element EIR, 2003).

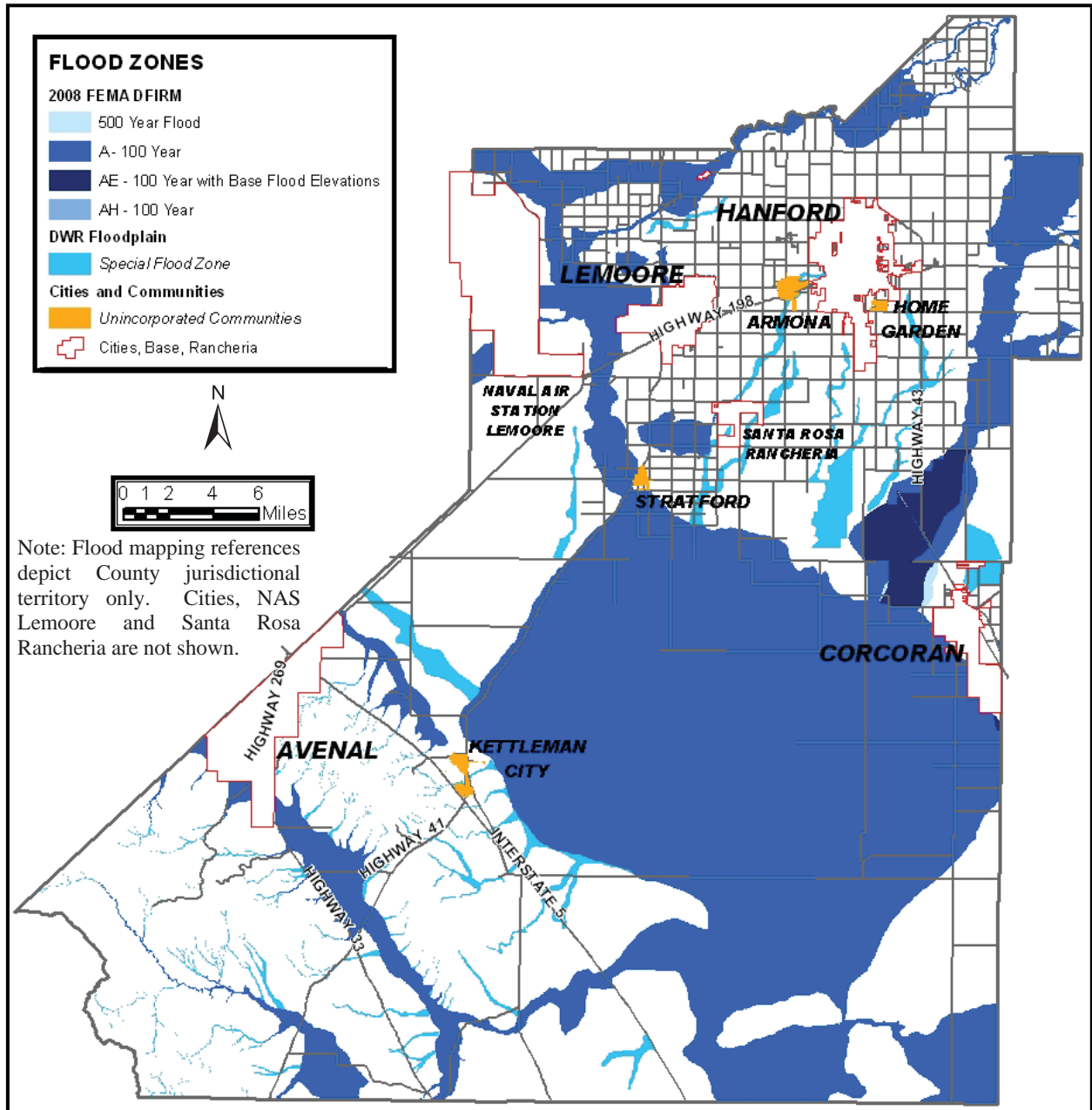
As described above, the hydrogeology of the Kings County area has played an important role in the development of the conditions that resulted in the presence of high salinity near-surface groundwater. ~~The results of a subsequent study (1998) conducted by the USGS on nitrate and pesticide trends in groundwater in the eastern San Joaquin Valley indicate that groundwater drinking water supplies have been degraded by fertilizers and pesticides. Of approximately 100 various types of wells monitored, nitrate concentrations exceeded U.S. EPA drinking water standards about one fourth of the time and pesticides were identified about two thirds of the time (although mostly at low concentrations).~~ As stated in the Basin Plan:

*The greatest long-term problem facing the entire Tulare Lake Basin is the increase of salinity in groundwater. Even though an increase in the salinity of groundwater in a closed basin is a natural phenomenon, salinity increases in the Basin have been accelerated by man's activity, with the major impact coming from intensive use of soil and water resources by irrigated agriculture. Salinity increases in groundwater could ultimately eliminate the beneficial uses of this resource. Controlled groundwater degradation by salinity is the most feasible and practical short-term management alternative for the Tulare Lake Basin.*

**c. Flood Hazards.** The primary indicator of potential flooding is the presence of a floodplain as defined by the Federal Emergency Management Agency (FEMA). A floodplain is defined by FEMA as the area of land adjacent to the water course that may be submerged by flood water during a 100-year storm. These areas are defined on FEMA Flood Insurance Rate Maps (FIRM). FEMA has updated the County's FIRMs with a new 2008 Digital Flood Insurance Rate Map (DFIRM), which became effective June 16, 2009, that defines various areas subject to 1 percent chance occurrence (100 year) and 500-year floods. The 2008 DFIRM expanded flood plains throughout the County as a result of 2005 post-Katrina Hurricane Levee Certification Guidelines (Code of Federal Regulations, Title 44, Section 65.10) and added approximately 148,000 acres into the County's high risk 100-year flood zone. Kings County maintains a Floodplain Management Program based on information and maps Published by FEMA. The State Department of Water Resources (DWR) has also identified additional "Special Flood Hazard" areas. Local areas subject to flood hazard as defined by the 2008 DFIRM are shown on Figure 4.9-1. Pursuant to Title 23, California Code of Regulations (23 CCR) Section 112, the Central Valley Flood Protection Board maintains jurisdiction over ten regulated streams, including: Clarks Fork; Crescent Bypass; Cross Creek; Dutch John Cut Slough; Hughes Creek; Fresno Slough; James Bypass; Kern River; Kern River Bypass Channel; and, Kings River.

**d. Dam Inundation.** Pine Flat and Terminus are the two dams in the region that, if breached, might cause flooding of significance to local inhabited areas within Kings County. If Pine Flat Dam failed while at full capacity, its floodwaters would arrive in Kings County within approximately five hours. If Terminus Dam failed while at full capacity, its floodwaters would arrive in Kings County within approximately twelve hours. The Terminus, Success, and Pine Flat Dams (located east of the valley floor in the Sierra Nevada Mountains and feeding the Kaweah, Tule, and Kings Rivers, respectively), plus improvements made to other flood control facilities in the Kings County area, have significantly reduced local natural flood hazards. According to Army Corps of Engineers inundation maps, the failure of Success Dam would not affect inhabited portions of Kings County.





Base map source: County of Kings, 2003.

FEMA Flood Insurance  
 Rate Map

Figure 4.9-1

**e. Regulatory Framework.** Development in the county and the four incorporated cities is subject to various local, state, and federal regulations and permits regarding water quality and the use of water resources. The federal government administers the National Pollutant Discharge Elimination System (NPDES) permit program, which regulates discharges into surface waters. Section 404 of the Clean Water Act prohibits the discharge of dredged or fill materials into Waters of the United States or adjacent wetlands without a permit from the U.S. Army Corps of Engineers.

The NPDES Nonpoint Source Program (established through the Clean Water Act) regulates the quality of runoff. The NPDES Nonpoint Source Program objective is to control and reduce pollutants to water bodies from nonpoint discharges. The Program is administered by the California Regional Water Quality Control Boards (RWQCBs). The boards establish requirements prescribing the quality of point sources of discharge and establish water quality objectives. These objectives are established based on the designated beneficial uses (e.g, water supply, recreation, and habitat) for a particular surface water or groundwater. The NPDES permits are issued to point source dischargers of pollutants to surface waters and are issued pursuant to Water Code Chapter 5.5 that implements the Federal Clean Water Act. Examples include, but are not limited to, public wastewater treatment facilities, industries, power plants, and groundwater cleanup programs discharging to surface waters. Discharge limits, under the NPDES permits, for minerals and pollutants are established and regulated by the RWQCB.

Projects disturbing more than one acre of land during construction are required to file a Notice of Intent (NOI) with the RWQCB to be covered under the State NPDES General Construction Permit for discharges of storm water associated with construction activity. A Storm Water Pollution Prevention Plan (SWPPP) must be developed and implemented for each site covered by the general permit. A SWPPP should include Best Management Practices (BMPs) designed to reduce potential impacts to surface water quality through the construction and life of the project.

The control of non-point source runoff from industrial sources and associated pollutants is regulated in California by the SWRCB under the statewide General Permit for Stormwater Discharges Associated with Industrial Activities Order No. 97-03-DWQ. The General Permit presents the requirements for compliance of certain industries with the NPDES. A wide range of industries is covered under the general permit, including mining operations, lumber and wood products facilities, petroleum refining, metal industries, and some agricultural product facilities.

As discussed under *Flood Hazards*, FEMA establishes base flood heights for 100-year and 500-year flood zones. However, Base Flood Elevations (BFE) are not established throughout most of the County with only the lower segments of Cross Creek having an established BFE.

## 4.9.2 Impact Analysis

**a. Methodology and Significance Thresholds.** Appendix G of the CEQA Guidelines considers a project to have significant impacts if a project would:

- *Violate any water quality standards or waste discharge requirements;*
- *Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level;*
- *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site;*
- *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;*
- *Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;*
- *Otherwise substantially degrade water quality;*
- *Place housing within a 100-year flood hazard areas structures which would impede or redirect flood flows;*
- *Place within a 100-year flood hazard area structures which would impede or redirect flood flows;*
- *Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam;*
- *Be subject to inundation by seiche, tsunami, or mudflow.*

Impacts related to drainage patterns and inundation by seiche, tsunami, or mudflow are less than significant and are discussed in Section 4.13, *Less than Significant Environmental Factors*.

**b. Project Impacts and Mitigation Measures.** This section describes generalized impacts associated with some of the projects anticipated under the 2014 RTP-SCS.

**Impact W-1** ~~Implementation of proposed transportation improvements and future projects facilitated by the land use scenario envisioned in the 2014 RTP-SCS would incrementally increase countywide water demand. Such impacts would be Class II, significant but mitigable.~~

~~Implementation of proposed transportation improvements and future projects facilitated by the land use scenario envisioned in the 2014 RTP-SCS would result in both short-term and long-term impacts to the County's water supply. Due to the programmatic nature of the 2014 RTP-SCS, a precise, project-level analysis of the specific impacts of individual transportation projects on water supply is not possible at this time. However, the general nature of water supply impacts is described below.~~



During grading and general construction activities, water would be needed to suppress fugitive dust generated by construction equipment. Most of the 2014 RTP-SCS projects involve modification of existing facilities. As such, a substantial increase in landscaped areas is not anticipated for these projects. Nevertheless, irrigation of landscaping associated with some of the proposed 2014 RTP-SCS projects would require water, and therefore contribute to long-term impacts to water supply.

~~In addition, future development projects constructed in accordance with the 2014 RTP-SCS's preferred growth scenario would require water supply. The precise size and type of these projects is not known at this time; however, such development would require potable water.~~ Major 2014 RTP-SCS projects, particularly roadway extensions, could also affect groundwater supplies by incrementally reducing groundwater recharge potential. This reduction in groundwater recharge could occur because the impermeable surfaces associated with the proposed improvements would increase surface water runoff at the expense of natural infiltration. The magnitude of impacts associated with individual 2014 RTP-SCS projects cannot be accurately determined at this programmatic stage of analysis. Nevertheless, the reduction in groundwater recharge is considered to be potentially significant.

Mitigation Measures. The following mitigation measures are recommended by KCAG to reduce, minimize or avoid significant adverse environmental impacts related to water supplies. Sponsor agencies can and should implement the following mitigation measures for applicable transportation projects that result in potential impacts to water supplies:

- W-1(a)** The project sponsor shall ensure that, where economically feasible, reclaimed water is used for dust suppression during construction activities.
- W-1(b)** The project sponsor shall ensure that low water use landscaping (i.e., drought tolerant plants and drip irrigation) is installed.
- W-1(c)** The project sponsor shall ensure that, if feasible, landscaping associated with proposed improvements is maintained using reclaimed water.
- W-1(d)** The project sponsor shall ensure that porous pavement materials are utilized, where feasible, to allow for groundwater percolation.
- W-1(e)** The sponsor of a 2014 RTP-SCS project that requires potable water service should coordinate with water supply system operators to ensure that the existing water supply systems have the capacity to handle the increase. If the current infrastructure servicing the project site is found to be inadequate, infrastructure improvements for the appropriate public service or utility should be provided by the project sponsor. In addition, wherever feasible, reclaimed water should be used for landscaping purposes instead of potable water.



Significance After Mitigation. Implementation of the above measures would reduce potential impacts to a less than significant level.

**Impact W-2 ~~Implementation of proposed transportation improvements and future projects facilitated by the land use scenario envisioned in the 2014 RTP-SCS could result in soil erosion and contaminants in runoff, which could degrade surface and ground water quality. This impact is considered Class II, significant but mitigable.~~**

~~Implementation of proposed transportation improvements and future projects facilitated by the land use scenario envisioned in the 2014 RTP-SCS would result in both short-term and long-term impacts to water quality. Due to the programmatic nature of the 2014 RTP-SCS, a precise, project-level analysis of the specific impacts of individual transportation projects on water quality is not possible at this time. However, the general nature of water quality impacts is described below.~~

~~Certain transportation improvements, such as road widening and expansion, as well as future development, would increase overall impervious surface area throughout the County. These projects may generate significant adverse impacts to surface water quality. Pollutants and chemicals associated with urban activities would run off new roadways and other impervious surfaces flowing into nearby bodies of water during storm events. These pollutants would include, but are not limited to: heavy metals from auto emissions, oil, grease, debris, and air pollution residues. Such contaminated urban runoff may remain largely untreated, thus resulting in the incremental long-term degradation of water quality.~~

~~Short-term adverse impacts to surface water quality may also occur during the construction periods of individual improvement projects because areas of disturbed soils would be highly susceptible to water erosion and downstream sedimentation. This impact is of particular concern where projects are located on previously contaminated sites. Without effective erosion and storm water control, contaminated soils exposed during construction activities may result in surface water contamination. In addition, grading and vegetation removal in proximity to creeks for construction, widening, and repair of bridges could result in an increase in erosion and sedimentation of creek banks. This could affect both water quality and the stability of slopes along the creeks. Regulations under the federal Clean Water Act require that a National Pollutant Discharge Elimination System (NPDES) storm water permit be obtained for projects that would disturb greater than an acre. Acquisition of the General Construction permit is dependent on the preparation of a Storm Water Pollution Prevention Plan (SWPPP) that contains specific actions, termed Best Management Practices (BMPs) to control the discharge of pollutants, including sediment, into the local surface water drainages. Many 2014 RTP-SCS projects, especially roadway extensions at the periphery of cities, would be subject to these regulations.~~

Mitigation Measures. The following mitigation measures are recommended by KCAG to reduce, minimize or avoid significant adverse environmental impacts related to water quality. Sponsor agencies can and should implement the following mitigation measures for applicable transportation projects that result in potential impacts to water quality:



- W-2(a)** The project sponsor shall ensure that fertilizer/pesticide application plans for any new right-of-way landscaping are prepared to minimize deep percolation of contaminants. This shall be accomplished through the placement of conditions on the project by the local jurisdiction during individual environmental review.
- W-2(b)** The project sponsor shall ensure that the road widening or roadway extension improvement projects directs runoff into subsurface percolation basins and traps which would allow for the removal of urban pollutants, fertilizers, pesticides, and other chemicals. This shall be accomplished through the placement of conditions on the project by the local jurisdiction during individual environmental review.
- W-2(c)** For roadway projects that would disturb at least one acre, a SWPPP shall be developed prior to the initiation of grading and implemented for all construction activity on the project site. The SWPPP shall include specific BMPs to control the discharge of material from the site and into the creeks and local storm drains. BMP methods may include, but would not be limited to, the use of temporary retention basins, straw bales, sand bagging, mulching, erosion control blankets and soil stabilizers.

Significance After Mitigation. Implementation of the above measures would reduce potential impacts to a less than significant level.

**Impact W-3** ~~Implementation of proposed transportation improvements and future projects in accordance with the land use scenario envisioned in the 2014 RTP-SCS could be subject to flood hazards due to storm events and/or dam failure. Impacts are considered Class II, significant but mitigable.~~

Implementation of proposed transportation improvements ~~and future projects under the land use scenario envisioned by the 2014 RTP-SCS~~ could be subject to flooding hazards due to storm events and/or dam failure. Due to the programmatic nature of the 2014 RTP-SCS, a precise, project-level analysis of the specific impacts of individual transportation projects on flooding hazards is not possible at this time. However, the general nature of these hazards, and their potential impacts, are described below.

Proposed transportation improvements ~~and future projects under the land use scenario envisioned by the 2014 RTP-SCS~~ in low-lying areas and in proximity to waterways and/or dam inundation zones may be subject to the hazard of flooding. The effects of flooding could include temporary inundation of a facility that impedes its use, or causes long-term damage to the facility. Flooding may also cause immediate damage to roadways and bridges, particularly during high-velocity flood events that wash away or erode facilities. This would typically occur adjacent to rising rivers or streams. Any facility within the flood zone of a stream would be subject to impacts. Erosion caused by flooding can damage paved facilities, and bridge supports



can be undermined or washed away. Flood hazards can also endanger occupants of habitable structures. Impacts are potentially significant.

Mitigation Measures. KCAG shall implement and sponsor agencies can and should implement the following mitigation measure for all transportation projects developed pursuant to the 2014 RTP-SCS that would result in impacts from flooding.

- W-3**            If a 2014 RTP-SCS project is located in an area with high flooding potential due a storm event or dam inundation, the project sponsor shall ensure that the structure is elevated at least one foot above the 100-year flood zone elevation and that bank stabilization and erosion control measures are implemented along creek crossings.

Significance After Mitigation. Implementation of the above measure would reduce potential impacts to a less than significant level.

**c. Specific RTP-SCS Projects That May Result in Impacts.** All RTP-SCS projects that require new construction or landscaping may create impacts as discussed in Section 4.11.2.b above and are therefore not mentioned in a table format. Individual projects could create significant impacts to water resources but would not necessarily do so. Additional specific analysis will need to be conducted as the individual projects are implemented in order to determine the actual magnitude of impact. Mitigation measures discussed above could apply to these specific projects.



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## 4.10 LAND USE

### 4.10.1 Setting

**a. Land Use Patterns.** The County of Kings is located in the San Joaquin Valley portion of the Central Valley of California that lies south of the Sacramento-San Joaquin Delta, and is comprised of 1,391 square miles. There are four incorporated cities within the boundaries of Kings County (Avenal, Corcoran, Hanford, and Lemoore) and two Federal territories (Naval Air Station Lemoore and Santa Rosa Rancheria Tribal Trust Land).

Kings County is one of eight counties that comprise the San Joaquin Valley, and is bounded on the west by the Coast Ranges; the Sierra Nevada Mountain range to the east; the Tehachapi Mountains to the south; and the Sacramento Valley to the north. The San Joaquin Valley supports extensive farmland practices.

The City of Hanford is the largest city within Kings County with an estimated population of 55,283. The City of Lemoore is the second largest city with an estimated population of 25,281, followed by Corcoran with 22,515 residents. The smallest city is Avenal with a population of 13,239. The population of Kings County was 150,181 people in early 2014 (California Department of Finance, 2014).

Kings County contains a mix of uses including agricultural, residential, commercial, open space/park/recreational, industrial, manufacturing, and institutional. The primary uses within the County are agricultural and residential. Kings County has over 958 square miles designated for agricultural uses (approximately 90 percent of the County's 1,396 square miles).

Residential and commercial uses are primarily located within the four cities, with some located within the unincorporated areas of Armona, Home Garden, Kettleman City and Stratford.

Open space in the County includes wilderness, wetlands, rivers, mountain ranges, monuments and parks. Much of this area includes the ranges located in the southern portion of the County comprised of the Avenal Ridge and La Cima areas, as well as a few community parks and recreation areas located in the northern portion of the County, such as Burris, Hickey, and Kingston.

Transportation infrastructure in Kings County includes roadways and utilities. Kings County contains approximately 945 miles of county roads, 386 miles of city streets, 130 miles of State Highways and 27 miles of Interstate. There are two public use airports and approximately 67 miles of rail lines in the county, including the Amtrak "San Joaquin" corridor. The County's major highway system encompasses Interstate 5, and several State Routes, including 33, 41, 43, 137, 198 and 269. Other prominent roadways include Avenal Cutoff Road, Excelsior Avenue, Flint Avenue, Grangeville Bypass, Grangeville Boulevard, Lacey Boulevard, Houston Avenue, Jackson Avenue, Kansas Avenue, Laurel Avenue, Whitley Avenue, Nevada Avenue, Pueblo Avenue, Utica Avenue, 6th Avenue, 10th Avenue, 10 ½ Avenue, 12th Avenue, 12 ¾ Avenue, 14th Avenue, 18th Avenue and 22nd Avenue. Additionally, the highway system includes numerous county maintained local roads, as well as local streets and highways within each of the four cities and four unincorporated communities. In addition to roadways, land dedicated



to utilities (maintenance and operations) in the County includes PG&E San Joaquin Valley habitat conservation plan area, which covers 276,347 acres in the San Joaquin Valley and covers the entire County.

**b. Agricultural Issues.** Kings County has the highest percentage of land enrolled in the protected farm lands programs in California. Kings County's ten leading commodities are milk, cotton, cattle and calves, alfalfa, pistachios, tomatoes, corn silage, almonds, walnuts and peaches (Kings County Department of Agriculture, 2008). The leading agricultural commodity, milk, represents 10% of the total statewide total in 2012 at approximately \$690 million (CDFA, California County Agricultural Commissioners' Reports, 2012).

**c. Population and Housing Issues.** Kings County is predominantly rural, which is reflected in settlement patterns. The built environment is focused in the four cities of Avenal, Corcoran, Hanford, and Lemoore, and the four unincorporated communities of Armona, Home Garden, Kettleman City, and Stratford, while 23% of the County's population of 150,181 residents lives in the unincorporated area of the County (California Department of Finance, 2014). These cities and communities in addition to the Naval Air Station Lemoore and the Santa Rosa Rancheria have been shaped by the settlement patterns of residents, businesses, and institutions.

During 2013, about 51,900 people were employed in Kings County and the unemployment rate was 13.5% (California Employment Development Department, 2013). By comparison, the statewide unemployment rate was 11% during 2013, while the national rate was only 8.1% (Bureau of Labor Statistics, 2014).

**d. Regulatory Setting.** The most direct regulation of land use and development in the plan area is provided by city and county governments, but there are numerous laws, regulations, policies, programs, and codes that at the federal and state levels of government that also regulate land use in various ways within the plan area. To simplify the volume and complexity of the regulations presented, this regulatory setting focuses on laws, regulations, policies, and programs that directly affect land use designations and zoning.

#### Federal Regulations.

*United States Department of Transportation Act, Section 4(f).* Section 4(f) of the Department of Transportation Act (DOT Act) of 1966 (49 U.S.C. § 303) was enacted to preserve the natural beauty of the countryside, 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.



*Other Federal Regulations.* The Army Corps of Engineers, U.S. Fish and Wildlife Service and U.S. Environmental Protection Agency, through enforcing the requirements of the Clean Water Act (CWA) of 1972 (33 U.S.C. § 1251 et seq.) and Endangered Species Act (ESA) of 1973 (16 U.S.C. § 1531 et seq.), have a significant influence on the location and amount of development in the region.

#### State Regulations.

*General Plans.* State law requires each city and county in California to adopt a general plan for the physical development of the land within its planning area. (Gov. Code, §§ 65300-65404.) The general plan must contain land use, housing, circulation, open space, conservation, noise, and safety elements, as well as any other elements that the city or county may wish to adopt. The circulation element of a local general plan must be correlated with the land use element.

*Local Agency Formation Commissions.* The Cortese-Knox-Hertzberg Local Government Reorganization Act (Cortese-Knox-Hertzberg Act) of 2000 (Gov. Code, § 56000 et seq.) establishes the process through which local agency boundaries are established and revised. Each county must have a local agency formation commission (LAFCO), which is the agency that has the responsibility to create orderly local agency 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 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. A city's sphere of influence is an indication of the city's future boundaries.

*Senate Bill 375 – The Sustainable Communities and Climate Protection Act of 2008.* In 2008, California enacted the Sustainable Communities and Climate Protection Act, also known as Sen. Bill No. 375 (Stats. 2008, ch. 728) (SB 375), which coordinates regional land use and transportation planning to reduce greenhouse gas emissions from cars and light trucks. The law resulted in several amendments to the currently adopted RTP process and regulations. Although the law has many smaller process-oriented changes that affect only the Metropolitan Planning Organization (MPO) preparing the plan, the bill also resulted in three major changes to the RTP process and the plan itself.

- *Create a Sustainable Communities Strategy (SCS).* The first major change is that the bill requires the MPO to adopt a Sustainable Communities Strategy (SCS) as part of the RTP. The SCS is a land use and transportation plan designed to achieve certain goals for the reduction of greenhouse gas emissions from automobiles and light trucks in the region. The greenhouse gas targets are to be set by the California Air Resources Board for the years 2020 and 2035, and will be updated every eight years.

The RTP has always been required to have a land use component that forecasts the amount and location of growth that is most likely to occur within the planning period. The purpose of the land use plan in the RTP is to pair with the transportation projects in



the plan and inform the regional travel model, which forms the basis for the RTP. The SCS serves to more effectively link the land use and transportation components of the RTP.

- *Potential CEQA Streamlining Benefits for Land Use Projects.* The second significant change to regional land use planning under SB 375 is that the plan now offers various levels of CEQA benefits to certain projects. SB 375 provides three tiers of CEQA benefits for Residential Mixed Use Projects, Transit Priority Projects, and Sustainable Community Projects. Generally, a Residential Mixed Use project must be at least 75 percent residential and be consistent with the general land use designation, density, building intensity, and applicable policies of an SCS or APS accepted by the California Air Resources Board (CARB) as achieving the greenhouse gas emissions reduction targets specified for ~~Tulare~~ Tulare the Kings County Region. Environmental documents for these projects are not required to discuss growth inducing impacts, reduced density alternatives, or any project specific or cumulative impacts from cars and light-duty truck trips on global warming or the regional transportation network.

Transit Priority Projects (TPPs) must also be consistent with the SCS In addition, the TPP must meet the following requirements: (1) the project must contain at least 50 percent residential based on total building square footage, but if less than 75 percent residential, it must have a minimum Floor Area Ratio of 0.75; (2) it must have a minimum net density of 20 dwelling units per acre; and (3) it must be located within one-half mile of a major transit stop or high quality transit corridor included in the regional transportation plan.

Projects meeting the above requirements will have all the benefits of Residential Mixed Use projects, plus the option to conduct a “Sustainable Communities Environmental Assessment” (SCEA). Under the SCEA, an Initial Study is prepared identifying significant or potentially significant impacts. Where the lead agency determines that cumulative impacts have already been addressed and mitigated in an SCS accepted by CARB, they are not “considerable” for purposes of further environmental review. Also, traffic control and mitigation may be covered by jurisdiction-wide measures, and off-site alternatives do not need to be addressed. The standard of review for the SCEA is the “substantial evidence” standard, which is deferential to the agency. In the case of a legal challenge, the agency’s analysis is presumed to be adequate and the burden of proof is on the plaintiff to demonstrate otherwise.

- *Linking the Proposed RTP-SCS to the Regional Housing Needs Allocation.* The last significant change to regional land use planning process under SB 375 is that the Regional Housing Needs Allocation (RHNA) process has been updated and linked to the RTP-SCS process. There are four areas of major change to the RHNA process under SB 375: extending the frequency of required updates to eight years, allowing some flexibility in the population projections used in the RHNA determination, allowing greater flexibility in implementation timelines, and timing the RHNA process to coincide with the RTP-SCS update process.

### Local Regulations.

*San Joaquin Valley Blueprint.* The eight San Joaquin Valley counties of San Joaquin, Stanislaus, Merced, Madera, Fresno, Tulare, Kings, and Kern make up the regional planning area under the San Joaquin Valley Blueprint. The San Joaquin Valley Blueprint (SJVB) process includes a cohesive regional framework that defines and offers alternative solutions to growth related issues for the Valley. The process involves the integration of transportation, housing, land use, economic development, and the environment to produce a preferred growth scenario to the year 2050.

Each county was responsible for developing individual local blueprints to be integrated into the larger eight county blueprint. Under the coordination efforts of KCAG, a Kings County Blueprint Vision for urban growth has been defined that emphasizes city-centered urban growth, economic development, and agricultural preservation. This local blueprint effort resulted in defining a Blueprint Urban Growth Boundary for each of the four cities and four unincorporated community districts in Kings County.

On April 1, 2009 the San Joaquin Valley Regional Planning Agencies Policy Council (Policy Council) adopted a preferred growth scenario for the San Joaquin Valley which calls for increasing residential densities to 6.8 units per acre on average in all jurisdictions throughout the eight San Joaquin Valley counties included in the blueprint. During the same meeting the Policy Council also adopted twelve smart growth principles intended to be incorporated into local jurisdictions general plans.

*General Plans.* The most comprehensive land use planning for the plan area 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 or which the jurisdiction has chosen to include. Required topics include land use, circulation, housing, conservation, open space, noise, and safety. Other topics that local governments frequently choose to address are public facilities, parks and recreation, and agriculture, among others. County general plans cover the unincorporated areas. City general plans are required to cover an area that is generally larger than the existing city limits (i.e., portions of the unincorporated area that fall within a city's sphere of influence).

*Specific and Community 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 development standards tailored to the area, as well as systematic implementation of the general plan. Specific and community plans are required to be consistent with the city's or county's general plan.

*Zoning.* The city or county zoning code is the set of detailed requirements that implement the general plan policies at the level of the individual parcel. The zoning code presents standards for different uses and identifies which uses 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, except in charter cities.



*Airport Land Use Compatibility Plans.* Pursuant to state law, each county has an Airport Land Use Commission (ALUC). The ALUC prepares an Airport Land Use Compatibility Plan for each general use airport. The plan provides for the orderly growth of the airport and the area surrounding the airport, excluding existing land uses. Its primary function is to safeguard the general welfare of the inhabitants within the vicinity of the airport and the public in general. Cities and counties must submit their general and specific plans to the ALUC upon adoption or amendment. The plans must be consistent with the Airport Land Use Compatibility Plan.

#### 4.10.2 Impact Analysis

**a. Methodology and Significance Thresholds.** Land use impacts were assessed based upon the level of physical impact anticipated in the various issues that can affect compatibility of existing and proposed land uses ~~on~~<sup>with</sup> air quality, noise, and aesthetics. Pursuant to the State CEQA guidelines, potentially significant impacts would result if the project would:

- *Physically divide an established community;*
- *Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect; or*
- *Conflict with any applicable habitat conservation plan or natural community conservation plan.*

Impacts related to conflicts with an adopted Habitat Conservation Plan are discussed in Section 4.13, *Less than Significant Environmental Factors*. Regarding agriculture resource impacts, pursuant to the State CEQA guidelines, potentially significant impacts would result if the project would:

- *Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use;*
- *Conflict with existing zoning for agricultural use, or a Williamson Act contract;*
- *Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use;*
- *Conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production;*
- *Result in the loss of forest land or conversion of forest land to non-forest use.*

The County does not contain any areas with existing zoning for forest land, timberland or Timberland Production. As discussed in the Initial Study (see Appendix A), while the County does contain some areas of riparian forest habitat, the County does not contain any areas with existing zoning for forest land, timberland or Timberland Production. Thus transportation projects listed in the RTP-SCS ~~and future land use patterns envisioned by the RTP-SCS~~ would not result in the loss or conversion of forest land and would not conflict with existing zoning for these types of lands. No impact would occur and further discussion of this issue in the EIR is not warranted.



**b. Project Impacts and Mitigation Measures.** ~~Land use conflict impacts~~ Impacts were assessed based upon the level of physical impact anticipated in the various issues that can affect compatibility as related to air quality, noise, and light and glare. This section describes generalized impacts associated with the transportation improvement projects and the land use scenario envisioned by the 2014 RTP-SCS.

**Impact LU-1 Implementation of proposed transportation improvements and the land use scenario envisioned by the 2014 RTP-SCS could result in land use conflicts with existing sensitive land uses. This is considered a Class II, *significant but mitigable* impact.**

Due to the programmatic nature of the 2014 RTP-SCS, a precise, project-level analysis of the specific land use conflicts is not possible at this time. In general, however, proposed transportation improvement projects and the land use scenario envisioned by the 2014 RTP-SCS could result in land use conflicts with existing and future nearby sensitive land uses, such as residential uses and schools. The proposed transportation improvements would result in temporary impacts related to air quality, noise, and visual character changes during construction (as discussed in Section 4.1, *Aesthetics*, 4.2, *Air Quality*, and 4.11, *Noise*). Nearby sensitive receptors could be temporarily exposed to such impacts. Long term land use conflicts related to proposed transportation improvements include impacts related to air quality, light and glare, a degradation of public safety and noise. As roadways are widened, expanded or otherwise improved to accommodate more vehicles, this would result in localized increases in toxic air emissions (primarily diesel and re-entrained dust emissions), ambient noise, and potentially light and glare. Nearby sensitive receptors, including existing and future residential land uses would be exposed to these impacts. Impacts are potentially significant.

~~In addition, the 2014 RTP-SCS encourages compact development in urban centers, increased housing, and pedestrian connectivity to minimize interregional trips and long distance commuting. This type of development would locate people closer to existing urbanized areas and transportation hubs and has the potential to expose people to toxic air contaminants (primarily diesel emissions), re-entrained dust (contaminated particulate matter), increased light and glare, and increased noise levels. Impacts would be most pronounced in residential areas, or in areas with schools, parks, or other land uses with large numbers of children or elderly people, who are most sensitive to noise and safety impacts. As discussed in Sections 4.2 *Air Quality* and 4.11 *Noise*, these impacts would be reduced to a less than significant level after implementation of the required mitigation measures contained therein. In general, the RTP-SCS aims to implement roadway projects and improvements, decrease traffic congestion, increase mobility, and improve alternative transportation infrastructure. However, construction and implementation of new transportation facilities or expansion of existing facilities could have features that divide established communities in the short-term and long-term. Short-term construction impacts would include physical barriers that limit access to a community or restrict movement within a community due to road or sidewalk closures, or other temporary construction-related inconveniences. Long-term impacts could result from the construction of widened 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, or increased traffic volumes could discourage pedestrian usage due to safety risks or elevated noise levels. However, the 2014 RTP-SCS is intended to develop a transportation system that encourages and promotes the safe and efficient development, management, and operation of~~





surface transportation systems to serve the mobility needs of people and freight and foster economic growth and development, while minimizing transportation-related fuel consumption and air pollution.

While roads may be expanded and widened under the 2014 RTP-SCS, such projects would generally include improvements to pedestrian facilities as well, thereby limiting the potential to divide a community, while improving overall pedestrian safety. ~~Additionally, the RTP-SCS would encourage compact development within existing urbanized areas. This type of development would not divide a community; rather it would promote the development of existing vacant or underutilized properties, thereby locating people closer to existing employment, goods and services within an established community.~~ Impacts related to dividing an established community would be less than significant.

Mitigation Measures. The following mitigation measure is recommended by KCAG to reduce potential impacts related to conflicts between ~~transportation~~RTP improvements and nearby sensitive land uses. Sponsor agencies can and should implement the following mitigation measure for applicable transportation projects that result in such conflicts:

- LU-1** Setbacks, fences, or other appropriate means shall be used to separate transportation facilities with the potential to generate land use conflicts ~~from~~with adjacent sensitive land uses. Roadways shall be designed to minimize potential impacts to pedestrians and bicyclists, particularly those living in adjacent residential areas, or attending nearby schools. Adequate striping, signs, and signalization shall be installed to slow traffic where appropriate and to reduce safety and noise impacts. The jurisdiction through which the proposed impacting roadway traverses would be responsible for implementing this measure, which may in part be based on project-specific noise and safety studies required by the local agency.

In addition, mitigation measures listed under Impact AES-2, in particular Mitigation Measure AES-2(b), would reduce impacts related to street lighting adjacent to sensitive land uses. Mitigation measures listed under Impact AQ-1 and AQ-3 in Section 4.2, *Air Quality*, would reduce localized air quality impacts. And, mitigation measures listed under Impacts N-1, N-2, and N-3, in Section 4.11, *Noise*, would reduce potential noise impacts.

Significance After Mitigation. Land use compatibility impacts and related air quality and noise impacts would be less than significant with implementation of mitigation measures referenced above.

- Impact LU-2** ~~Implementation of proposed transportation improvements and the land use scenario envisioned by the 2014 RTP-SCS could temporarily and permanently displace or disrupt existing residences and businesses. This is considered a Class II, significant but mitigable impact.~~



During construction on both new and existing roadways, businesses may be temporarily disrupted through temporary road or lane closures, or blockage of access to parking. In addition, projects that involve extension of roadways may result in displacement of residents or businesses. Both temporary disruption and permanent displacement are considered potentially significant impacts.

The majority of transportation improvements would occur within existing roadway rights-of-way and in urban areas (such as Hanford). These improvements are not expected to displace residents or businesses. However, it is possible that future transportation projects, particularly widening or expansion projects, could encroach onto private property, potentially requiring the removal of existing structures and/or otherwise limiting access as described above. ~~Further, future development projects could displace residents if redevelopment of existing residential structures occurs. The intention of compact development projects is to develop on vacant or highly under-utilized properties. As a result, significant numbers of people are not expected to be displaced. Nonetheless, it is possible that some people may be displaced as a result of development envisioned in the Sustainable Communities Strategies.~~ Access and disruption impacts associated with construction would occur to varying degrees with all construction projects, but would be most acute in urban areas with high volumes and traffic and businesses that depend upon ease of vehicular access. This is considered a potentially significant impact.

Mitigation Measures. The following measures are recommended by KCAG to reduce potential impacts related to temporary disturbance to and permanent displacement of residences and businesses. Sponsor agencies can and should implement the following mitigation measure for applicable transportation projects that result in temporary disturbance and displacement.

- LU-2(a)** The project sponsor of 2014 RTP-SCS projects with the potential to displace residences or businesses should assure that project-specific environmental reviews consider alternative alignments and developments that avoid or minimize impacts to nearby residences and businesses.
- LU-2(b)** Where project-specific reviews identify displacement or relocation impacts that are unavoidable, the project sponsor should ensure that all applicable local, state, and federal relocation programs are used to assist eligible persons to relocate. In addition, the local jurisdiction shall review the proposed construction schedules to ensure that adequate time is provided to allow affected businesses to find and relocate to other sites.
- LU-2(c)** For all 2014 RTP-SCS projects that could result in temporary lane closures or access blockage during construction, a temporary access plan should be implemented to ensure continued access to affected cyclists, businesses, and homes. Appropriate signs and safe access shall be guaranteed during project construction to ensure that businesses remain open.



Significance After Mitigation. Implementation of recommended measures would mitigate impacts relating to temporary disturbance and long-term displacement to a less than significant level.

**Impact LU-3 The 2014 RTP-SCS would be consistent with applicable adopted state and local goals, policies and regulations. This is a Class III, less than significant, impact.**

State-level policies applicable to the 2014 RTP-SCS include MAP-21, Caltrans Smart Mobility 2010, SB 375 and AB 32. The 2014 RTP-SCS contains goals that guide future transportation improvement projects and land use patterns within the region. The goals of the 2014 RTP-SCS are based on, and consistent with, both the planning factors stated in MAP-21, and the Caltrans Smart Mobility 2010 framework, tailored to the Kings County region. The approach embraces MAP-21's new emphasis on performance measurement and continues the transition in emphasis from mode specific to program goals. The 2014 RTP-SCS sets goals that address the need for future development (consistent with the General Plan land use and zoning designations of the local agencies), an expanded transportation system, and the health and safety of Kings County residents and visitors.

The overall goal of the RTP, described in the Policy Element is to develop a transportation system that encourages and promotes the safe and efficient development, management, and operation of surface transportation systems to serve the mobility needs of people and freight (including meeting the Americans with Disabilities Act requirements, accessible pedestrian walkways, and bicycle transportation facilities) and foster economic growth and development, while minimizing transportation-related fuel consumption and air pollution.

The 2014 RTP-SCS also includes a range of policies and objectives relating to the following specific transportation issues: regional highway system, goods movement, public transportation, aviation, non-motorized facilities, and transportation systems management as well as environmental, program, and public participation policies. The goals, objectives, and policies contained in the RTP-SCS are described generally below and a complete list of 2014 RTP-SCS policies and objectives is included in Section 2.0, *Project Description*.

- **Program Policies.** The RTP promotes transportation solutions that are based on interagency coordination consistent with overall growth planned in the cities and County, transportation systems management evaluations, public safety and efficiency, and consideration of funding sources.
- **Environmental Policies.** The RTP promotes consideration of the environmental consequences of transportation projects (such as air quality, energy use, noise, and changes to land use) and development of mitigation options or alternative solutions that lessen environmental problems while serving transportation needs.
- **Public Participation Policies.** The RTP promotes public participation through public meetings and outreach efforts to develop transportation facilities that meet the needs of all segments of the population.



- **Regional Highway System Policies.** The RTP promotes maintenance and improvement project projects that provide safety, operational improvements, and repairs to keep the regional highway system from falling further into disrepair and to maximize safety, service, and efficiency.
- **Goods Movement Policies.** The RTP promotes the safe and efficient transport of commodities by the trucking and railway industries and will continue to provide for opportunities of collaboration, specifically in regards to facility improvements.
- **Public Transportation Policies.** The RTP promotes public transportation via transit, inter-city rail, or ridesharing by coordinating with local, regional, and state efforts. The coordination efforts also address the maintenance and improvement of facilities.  
**Aviation Policies.** The RTP promotes the development and maximum utilization of public and private airports to provide for county and regional general air transportation needs, while ensuring compatibility of these facilities with surrounding land uses.
- **Non-Motorized Transportation Policies.** The RTP promotes bicycle and pedestrian transportation through the maintenance and improvement of the existing transportation system, public education programs, and the integration of bicycle and pedestrian considerations into local planning agendas.
- **Transportation Systems Management Policies.** The RTP promotes transportation systems that are safe and efficient while creating minimal environmental, social, or economic impacts.

Roads may be expanded and widened under the 2014 RTP-SCS, which would generally include improvements to pedestrian facilities as well, thereby limiting the potential to divide a community, while improving overall pedestrian safety. ~~Additionally, the 2014 RTP-SCS would encourage compact development within existing urbanized areas to reduce distance between trip destinations and increase transportation options, which support the land pattern. This approach is consistent with the general provisions of MAP 21, and the Caltrans Smart Mobility 2010 framework local transportation. This type of development would not divide a community; rather it would promote the development of existing vacant or underutilized properties, thereby locating people closer to existing employment, goods and services within an established community.~~ Impacts related to dividing an established community would be less than significant.

In addition, the 2014 RTP-SCS will help the region reach its GHG emission reduction targets established by the California Air Resource Board (CARB) under AB 32 and SB 375, as discussed in Section 4.8 *Greenhouse Gas Emissions/Climate Change*. ~~The 2014 RTP-SCS encourages mixed use and infill development to reduce automobile traffic and commute trip lengths.~~ The 2014 RTP-SCS would meet the CARB established goal of a 5% reduction from 2005 emissions levels by 2020 and a 10% reduction from 2005 emissions levels by 2035 (see Section 4.8, *Greenhouse Gas Emissions/Climate Change*).

In planning for projected growth in the region, the 2014 RTP-SCS represents a voluntary growth strategy that retains local government land use autonomy. Neither SB 375 nor any other law

requires local member agency general plans or land use regulation to be consistent with the 2014 RTP-SCS. Full implementation of the 2014 RTP-SCS is therefore dependent on local government policy decisions and voluntary local government action.

The proposed 2014 RTP-SCS includes a list of planned and programmed projects including local and regional capital improvements that have been anticipated or accounted for in:

- Each local jurisdiction's General Plan
- The Federal Transportation Improvement Plan (FTIP), including Federal Transit Administration (FTA) grant allocations
- The Statewide Transportation Improvement Plan (STIP)
- The Regional Transportation Improvement Program (RTIP)

In summary, the objective of the 2014 RTP-SCS is to provide for a comprehensive transportation system of facilities and services that meets the public's need for the movement of people and goods, and that is consistent with the social, economic, and environmental goals and policies of the region.

At the local level, the 2014 RTP-SCS builds on and incorporates local planning efforts of its member agencies and the San Joaquin Valley Blueprint. In all cases for the RTP-SCS, roadway improvements are anticipated by the general plans of the applicable local jurisdictions. As such, RTP roadway extensions are not inherently growth-inducing, but would instead be phased to respond to land development as it occurs under adopted general plans. Additionally, the preferred SCS land use scenario uses existing general plan densities with actual projected development occurring within those parameters.

Improvements included in the 2014 RTP-SCS have been proposed by the various jurisdictions that comprise the KCAG region. The 2014 RTP-SCS and associated programmed or planned projects are generally consistent with local and regional plans and policies. Additionally, the 2014 RTP-SCS includes policies for encouraging consistency with other State, regional, and local policies. Impacts would be less than significant.

Mitigation Measures. None required.

Significance after Mitigation. Impacts are less than significant.

**Impact LU-4 Implementation of proposed transportation improvements ~~and the land use scenario~~ envisioned by the RTP-SCS could redistribute residential and commercial development; however, RTP-SCS projects that are included in local General Plans would not significantly induce growth beyond that already anticipated, as the primary purpose of proposed improvements is to accommodate projected growth. This is a Class III, *less than significant*, impact.**

The majority of transportation improvements are located in existing urbanized areas such as Avenal, Corcoran, Hanford, and Lemoore; however, projects are also located in rural or semi-rural areas. Such transportation improvements can be perceived as removing an obstacle to



growth by either creating additional traffic capacity (in the case of widening) or improving access to undeveloped areas (in the case of road extensions). However, all transportation improvement projects are anticipated by the general plans of the applicable local jurisdictions, as all improvements have been coordinated with the applicable local jurisdiction. These improvements are designed and intended to accommodate anticipated growth. The improvements would be phased to respond to land development as it occurs under adopted general plans. New roadways would be funded, in part, by fees generated by new development. If roadways were to be constructed in advance of land development (because of Caltrans or other outside funding), the local general plans would still control the ultimate extent of urban expansion in an area.

~~The land use scenario envisioned by the 2014 RTP-SCS would facilitate development projects within existing urbanized areas and therefore redistribute growth patterns. The location of development projects would generally be on properties that have been identified as vacant or underutilized within applicable local jurisdictions. Compact development projects would not necessarily result in significant new population growth within these jurisdictions; rather it would accommodate anticipated growth and concentrating it within existing urban cores instead of on the periphery of urban areas or within rural or semi-rural areas. Therefore, population growth impacts would be less than significant.~~

Mitigation Measures. No mitigation measures are required.

Significance After Mitigation. Impacts would be less than significant.

**Impact LU-5 Implementation of proposed transportation improvements and ~~the land use scenario~~ envisioned by the 2014 RTP-SCS could result in the conversion of agricultural lands including Prime Farmland and lands under Williamson Act contract to non-agricultural uses. This is a Class I, *significant and unavoidable* impact.**

Much of Kings County is underlain by prime agricultural soils, as defined by both the state Important Farmlands Inventory and the Natural Resources Conservation Service. For example, the portions of Kings County located with the Kettleman Plain, Sunflower Valley, and the western margin of the Kettleman Hills contain extensive high-quality agricultural soils, defined as prime soils (Class I or II soils). A few roadway extensions throughout the county could encroach on prime agricultural soils, or soils that could support high quality agricultural production.

~~The proposed land use scenario includes a compact land pattern with an emphasis on higher density development. Since the land use scenario would place a greater emphasis on development in existing urban areas and limit expansion at community or city borders where urban development interfaces with agricultural lands impacts in the form of conversion of agricultural land would be minimal. However, impacts from individual development projects needs to be addressed on a case by case basis. Additionally, site level design could reduce the total amount of land converted, as described below. Local roadway projects and bike or pedestrian paths are less likely to impact Prime Farmland than expressways and highways, as these projects are more likely to be located within existing urban areas (either incorporated or~~



unincorporated) and are less likely to require substantial amounts of additional right of way. ~~Therefore~~ Nevertheless, the overall impact to Prime Farmland would be potentially significant.

The Williamson Act allows county and city governments to define compatible land uses for contract lands within their jurisdictions, as long as those uses are consistent with the compatibility principles set forth in Government Code, Section 51238.1. Public agencies acquiring contracted lands for a public use (such as transportation facilities) must comply with Government Code Section 51293. Two criteria must be met when acquiring contracted lands:

1. The location is not based primarily on a consideration of the lower cost of acquiring land in an agricultural preserve.
2. If the land for any public improvement is agricultural land covered under a Williamson Act contract and there is no other land within or outside the preserve on which it is reasonably feasible to locate the public improvement.

~~The proposed land use scenario focuses on compact development patterns. Since the land use scenario would place a greater emphasis of development in existing urban areas and limit expansion at community or city borders where urban development interfaces with agricultural lands impacts in the form of conversion of agricultural land would be minimal. However,~~ Impacts from individual development transportation projects needs to be addressed on a case-by-case basis. This impact would be potentially significant.

Mitigation Measures. No measures are available to mitigate the loss of agricultural lands, short of eliminating proposed roadways that would traverse or be adjacent to Prime Farmland or Williamson Act lands. The following mitigation measures are recommended by KCAG to reduce, minimize or avoid significant adverse environmental impacts. Sponsor agencies can and should implement the following mitigation measures for applicable transportation projects that result in impacts to agricultural. Project-specific environmental impacts may require these mitigation measures be revised or expanded in response to site-specific conditions:

- LU-5(a) When new roadway extensions or widenings are planned, the project sponsor should assure that project-specific environmental reviews consider alternative alignments that reduce or avoid impacts to Prime Farmlands.
- LU-5(b) Rural roadway alignments shall follow property lines to the extent feasible, to minimize impacts to the agricultural production value of any specific property. Farmers should be compensated for the loss of agricultural production at the margins of lost property, based on the amount of land deeded as road right-of-way, as a function of the total amount of production on the property.
- LU-5(c) When new roadway extensions are planned in areas that contain sensitive farmland, the local jurisdiction in which the RTP project is located shall assure that project-specific environmental reviews consider the use of agricultural conservation easements on land of



at least equal quality and size as compensation for the loss of agricultural land. Agricultural conservation easements could be implemented by directly purchasing easements or donating mitigation fees to a local, regional, or statewide organization or agency whose purpose includes the acquisition and stewardship of agricultural conservation easements.

Significance After Mitigation. Although the above measures would reduce impacts to Prime Farmland and lands under Williamson contract to the degree feasible, such impacts cannot be fully mitigated due to the potential conversion to non-agricultural use. Impacts from individual projects will need to be addressed on a case-by-case basis; however, because impacts to individual Prime Farmland and lands under Williamson contract cannot be assumed to be less than significant, agricultural impacts are considered *significant and unavoidable*.

**c. Specific 2014 RTP-SCS Projects That May Result in Impacts.** All proposed projects listed in Section 2.0 *Project Description* would associate with Impacts LU-1, LU-2, LU-3 and LU-4. Table 4.10-1 identifies those projects that may create impacts as discussed with impact LU-5. The individual projects listed could create significant land use impacts but would not necessarily do so. Additional specific analysis will need to be conducted as the individual projects are implemented in order to determine the actual magnitude of impact. Mitigation measures discussed above would apply to these specific projects.

**Table 4.10-1  
 2014 RTP-SCS Projects that May Result in Land Use Impacts**

<b>Jurisdiction</b>	<b>Route</b>	<b>Project Location</b>	<b>Project Description</b>	<b>Impact</b>
Kings County	6 <sup>th</sup> Ave	SR 198 To Fargo	Reconstruct 0.5 mile in close proximity to ag lands	LU-5
Hanford	Lacey Blvd	At 13 <sup>th</sup> Avenue	Signals and bridge work in close proximity to ag lands	LU-5
Kings County	10 ½ Ave	Kansas to Nevada	widen to 28 feet without increasing number of lanes	LU-5
Hanford	9th Ave.	Grangeville Blvd. to Fargo Ave.	New arterial roadway -4 lanes w/ median	LU-5
Hanford	9th Ave.	Lacey Blvd. to Grangeville Blvd.	New arterial roadway -4 lanes w/ median	LU-5





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## 4.11 NOISE

This section evaluates both temporary noise impacts associated with construction activity and long-term noise impacts associated with the 2014 RTP-SCS.

### 4.11.1 Setting

**a. Overview of Sound Measurement.** The following discussion describes the characteristics of noise and vibration.

Noise. Noise level (or volume) is generally measured in decibels (dB) using the A-weighted sound pressure level (dBA). The A-weighting scale is an adjustment to the actual sound power levels to be consistent with that of human hearing response, which is most sensitive to frequencies around 4,000 Hertz (about the highest note on a piano) and less sensitive to low frequencies (below 100 Hertz). In addition to the actual instantaneous measurement of sound levels, the duration of sound is important since sounds that occur over a long period of time are more likely to be an annoyance or cause direct physical damage or environmental stress. One of the most frequently used noise metrics that considers both duration and sound power level is the equivalent noise level (Leq). The Leq is defined as the single steady A-weighted level that is equivalent to the same amount of energy as that contained in the actual fluctuating levels over a period of time. Typically, Leq is summed over a one-hour period.

Sound pressure is measured on a logarithmic scale with the 0 dB level based on the lowest detectable sound pressure level that people can perceive (an audible sound that is not zero sound pressure level). Based on the logarithmic scale, a doubling of sound energy is equivalent to an increase of 3 dB and a sound that is 10 dB less than the ambient sound level has no effect on ambient noise. Because of the nature of the human ear, a sound must be about 10 dB greater than the reference sound to be judged as twice as loud. In general, a 3 dBA change in community noise levels is noticeable, while 1-2 dBA changes generally are not perceived. Quiet suburban areas typically have noise levels in the range of 40 to 50 dBA, while noise levels along arterial streets are generally in the 50 to 60+ dBA range. Normal conversational levels are in the 60-65 dBA range, and ambient noise levels greater than that can interrupt conversations.

Noise levels typically attenuate at a rate of 6 dBA per doubling of distance from point sources such as industrial machinery. Noise from lightly traveled roads typically attenuates at a rate of about 4.5 dBA per doubling of distance. Noise from heavily traveled roads typically attenuates at about 3 dBA per doubling of distance.

The actual time period in which noise occurs is also important since noise that occurs at night tends to be more disturbing than that which occurs during the daytime. To evaluate community noise on a 24-hour basis, the day-night average sound level was developed (Ldn). Ldn is the time average of all A-weighted levels for a 24-hour period with a 10 dB upward adjustment added to those noise levels occurring between 10:00 PM and 7:00 AM to account for the general increased sensitivity of people to nighttime noise levels. The Community Noise Equivalent Level (CNEL) is identical to the Ldn with one exception. The CNEL adds 5 dB to evening noise levels (7:00 PM to 10:00 PM). Thus, both the Ldn and CNEL noise measures represent a 24-hour



average of A-weighted noise levels with Ldn providing a nighttime adjustment and CNEL providing both an evening and nighttime adjustment.

Vibration. Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Vibration can be a serious concern, causing buildings to shake and rumbling sounds to be heard. In contrast to noise, vibration is not a common environmental problem. It is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads.

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. Decibel notation (VdB) is commonly used to measure RMS. The decibel notation acts to compress the range of numbers required to describe 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 levels of groundborne vibration can damage fragile buildings or interfere with equipment that is highly sensitive to groundborne vibration (e.g., electron microscopes).

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 which is well below the threshold of perception for humans (human perception 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.

**b. Noise and Vibration Sources.** Many principal noise generators within the Kings County region are associated with transportation (i.e., freeways, airports, railroads and arterial roadways). Local collector streets are not considered significant noise sources as traffic volume and speeds are generally much lower than for freeways and arterial roadways. Generally, transportation-related noise is the dominant source within urban environments. Other noise sources are commercial and industrial uses, agricultural operations, and recreational uses. The major noise sources in the county are described below.

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.

Motor Vehicle Traffic. Streets and Highways are identified as the most extensive source of mobile noise in the County. The noise generated from vehicles using roads within the County is governed primarily by the number of vehicles, type of vehicles (mix of automobiles, trucks, and other large vehicles), and speed. Interstate 5 and five State Routes (State Route 33, State Route 41, State Route 43, State Route 198, and State Route 269) traverse the County. Three of the four unincorporated Community Districts are bisected by a State Route, with State Route 198 crossing through Armona, and State Route 41 crossing through both Stratford and Kettleman City. Many of the County-maintained Avenues are also used by cross traffic between cities and communities. According to the Kings County 2035 General Plan, noise levels range from 77 to 62 Ldn at a distance of 100 feet from the centerline of Interstate 5 and the five State Routes that traverse the County. Thus, noise-sensitive land uses in the vicinity of the roadway corridors therefore have the potential to be exposed to noise in excess of what the County normally considers acceptable. Traffic on all other major transportation corridors (i.e., avenues and boulevards) and on several principal arterials in Kings County also generates noise in excess of 60 dB Ldn when measured at 100 feet from the centerline (Kings County, 2010).

Aircraft Operation. The airports and aircraft used throughout the County include public, private and military operations. Major airports include the Hanford Municipal Airport, Corcoran Airport and the Lemoore Naval Air Station. There are also several private airstrips and agricultural crop duster airstrips.

The Hanford Municipal Airport serves the majority of aviation demand within the County. Hanford Municipal Airport is the only city-owned air facility in the County and will remain the most active public use, public airport for the foreseeable future. There is one air charter service available and approximately 70 aircraft are based at the airport. Several crop dusters are also based at the airport.

Corcoran Airport is ~~the second busiest public use airport in Kings County~~ a private use airport in King County. Approximately 5,000 operations originate from the field at present. Single engine propeller aircraft traffic will increase to 8,100 and the number of based aircraft is expected to be 33 by the year 2020, according to Caltrans forecasts. The distribution of aircraft operations by aircraft type will be 50 percent crop dusters, 45 percent single-engine propeller aircraft, and five percent twin-engine propeller aircraft by the year 2020.

The Naval Air Station Lemoore (NASL) is the Navy's largest master jet base and the only on the west coast. NASL is the home port for all active-duty, light-attack aircraft squadrons assigned to the Pacific Fleet. The NASL is located in western Kings County and a portion of the station is in Fresno County. The NASL averages approximately 210,000 flight operations per year (NAS Lemoore Joint Land Use Study, 2011).

Railroad Operations. Railroad lines throughout the County primarily travel through County agricultural lands and the three Cities of Corcoran, Hanford and Lemoore. Armona is the only unincorporated Community District with a rail line (San Joaquin Valley Railroad) traveling through it. Railroad operations within the County consist of the San Joaquin Valley Railroad (SJVRR) operating along the east-west railroad line and the Burlington Northern Santa Fe (BNSF) and Amtrak operating along the north-south railroad line. Railroad operations along the SJVRR track consist of approximately one to two trains per week. More frequent train trips



occur along the north-south rail lines with daily Amtrak passenger trips, and freight trips departing from Hanford and Corcoran industrial parks.

Commercial and Industrial Uses. Noise sources associated with service commercial uses such as automotive repair facilities, wrecking yards, tire installation centers, car washes, loading docks, etc., are found at various locations within Kings County. The County also contains a number of different industrial operations that produce noise, including food processing plants, agricultural warehouses, and waste management facilities.

Agricultural Operations. There are numerous active agricultural uses within the County protected by the County's Right-to-Farm Ordinance. Noise generated by agricultural processes varies due to the wide array of equipment types and conditions under which that equipment is used. The Right-to-Farm Ordinance recognizes that "...agricultural activities and operations, including but not limited to, equipment and animal noise ...are conducted on a 24-hour a day, seven-day a week basis..." in the agricultural areas of the County. Therefore, a normal and usual agricultural operation creating elevated sound levels are not normally considered a nuisance. Maximum noise levels generated by farm-related tractors typically range from 77 to 85 dB at a distance of 50 feet from the tractor, depending on the horsepower of the tractor and the operating conditions. Hail cannons are used in the County by some agricultural operations in attempt to prevent or limit damage to crops caused by hailstorms. These cannons generate high noise levels with the general theory that the shock wave from the noise will prevent hail from forming in the clouds.

Recreational Uses. The Lemoore Raceway is located in the southeast corner of State Route 41 (19th Avenue) and Idaho Avenue within the City of Lemoore. The Raceway facility includes a 1/6 mile, semi-banked, midget car, clay oval track. Racing typically takes place on Saturday nights. Maximum noise levels associated with raceways such as the Lemoore Raceway can register between 100 and 120 dBA within the vicinity of the track. Adjacent properties are located within the County's jurisdiction, and noise generated by the raceway could significantly contribute to the ambient noise environment at these properties.

There are three water ski lakes located throughout Kings County. Significant noise sources at this type of facility include water ski boats and personal watercraft (jet skis). Bollard Acoustical Consultants, Inc. (BAC) file data indicate that water ski boat passbys produce a sound exposure level (SEL) of 80 dB and a maximum noise level (Lmax) of 70 dB can typically be expected at a distance of 100 feet from the boat passage. Based on a SEL of 80 dB per boat passage, and an assumed 40 passages per hour, the average hourly noise level at a reference distance of 100 feet would be approximately 60 dB Leq. BAC file data for modern personal watercraft (jet ski) passbys indicates that a sound exposure level (SEL) of 73 dB and a maximum noise level (Lmax) of 66 dB can typically be expected at a distance of 100 feet from the point of passage. Based on a SEL of 73 dB per jet ski passage, and an assumed 60 passages per hour, the average hourly noise level at a reference distance of 100 feet would be approximately 55 dB Leq (Kings County, 2010).

**c. Regulatory Framework.** Various federal agencies have set standards for transportation-related noise and vibration sources that are closely linked to interstate commerce, such as aircraft, locomotives, and trucks. The State sets noise standards for those noise sources that are not preempted from regulation, such as automobiles, light trucks, and



motorcycles. Noise and vibration sources associated with industrial, commercial, and construction activities are generally subject to local control through noise ordinances and general plan policies.

Federal Regulations. Relevant federal regulations include those established by the Federal Highway Administration (FHWA), Federal Transit Authority (FTA), Federal Aviation Administration (FAA), and Department of Housing and Urban Development (HUD).

*Federal Highway Administration.* Federal regulations for railroad noise are contained in 40 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 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).

Title 23 of the Code of Federal Regulations (23 CFR § 772) provides procedures for preparing operational and construction noise studies and evaluating noise abatement for federal and federal-aid highway projects. Under 23 CFR § 772.7, 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, increase the volume or speed of traffic or move the traffic closer to a receiver. Type I projects include the addition of an interchange, ramp, auxiliary lane, or truck-climbing lane to an existing highway, or the widening an existing ramp by a full lane width for its entire length. Projects unrelated to increased noise levels, such as striping, lighting, signing, and landscaping projects, are not considered Type I projects.

Under 23 CFR § 772.11, noise abatement must be considered for Type I projects if the project is predicted to result in a traffic noise impact. In such cases, 23 CFR § 772 requires that the project sponsor “consider” noise abatement before adoption of the environmental document. This process involves identification of noise abatement measures that are reasonable, feasible, and likely to be incorporated into the project as well as noise impacts for which no apparent solution is available.

Traffic noise impacts, as defined in 23 CFR § 772.5, occur when the predicted noise level in the design year approach or exceed the NAC specified in 23 CFR § 772, or a predicted noise level substantially exceeds the existing noise level (a “substantial” noise increase). A “substantial



increase” is defined as an increase of 12 dB Leq during the peak hour of traffic. For sensitive uses, such as residences, schools, churches, parks, and playgrounds, the NAC for interior and exterior spaces is 57 dB Leq and 66 dB leq, respectively, during the peak hour of traffic noise. Table 4.11-1 summarizes NAC corresponding to various land use activity categories. Activity categories and related traffic noise impacts are determined based on the actual land use in a given area.

**Table 4.11-1  
Noise Abatement Criteria**

NAC, Hourly A-Weighted Noise Level, dBA Leq(h)	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)	Residential, active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas,
52 (Interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
72 (Exterior)	Hotels, motels, offices, restaurants/bars, and other developed lands not included above.

Source: FWHA, [http://www.fhwa.dot.gov/environment/noise/regulations\\_and\\_guidance/faq\\_nois.cfm](http://www.fhwa.dot.gov/environment/noise/regulations_and_guidance/faq_nois.cfm), accessed February 2014.

*Federal Aviation Administration (FAA).* Aircraft operated in the U.S. are subject to federal requirements regarding noise emissions levels. These requirements are set forth in Title 14 CFR, Part 36. Part 36 establishes maximum acceptable noise levels for specific aircraft types, taking into account the model year, aircraft weight, and number of engines

*Federal Transit Administration.* The FTA has developed guidance to evaluate noise impacts from operation of surface transportation modes (i.e. passenger cars, trucks, buses, and rail) in the 2006 FTA *Transit Noise Impact and Vibration Assessment*. All mass transit projects receiving federal funding must use these guidelines to predict and assess potential noise and vibration impacts. As ambient levels increase, smaller increments of change are allowed to minimize community annoyance related to transit operations.

*Housing and Urban Development.* The mission of HUD includes fostering "a decent, safe, and sanitary home and suitable living environment for every American." Accounting for acoustics is intrinsic to this mission as safety and comfort can be compromised by excessive noise. To facilitate the creation of suitable living environments, HUD has developed a standard for noise criteria. The basic foundation of the HUD noise program is set out in the noise regulation 24 CFR Part 51 Subpart B, Noise Abatement and Control.

HUD's noise policy requires noise attenuation measures be provided when proposed projects are to be located in high noise areas. Within the HUD Noise Assessment Guidelines, potential



noise sources are examined for projects located within 15 miles of a military or civilian airport, 1,000 feet from a road or 3,000 feet from a railroad.

HUD exterior noise regulations state that 65 dBA Ldn noise levels or less are acceptable for residential land uses and noise levels exceeding 75 dBA Ldn 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 focused on achieving that goal. It is assumed that with standard construction methods and materials, any building will provide sufficient attenuation so that if the exterior level is 65 dBA Ldn or less, the interior level will be 45 dBA Ldn or less. Noise criteria are consistent with FHWA and related state requirements.

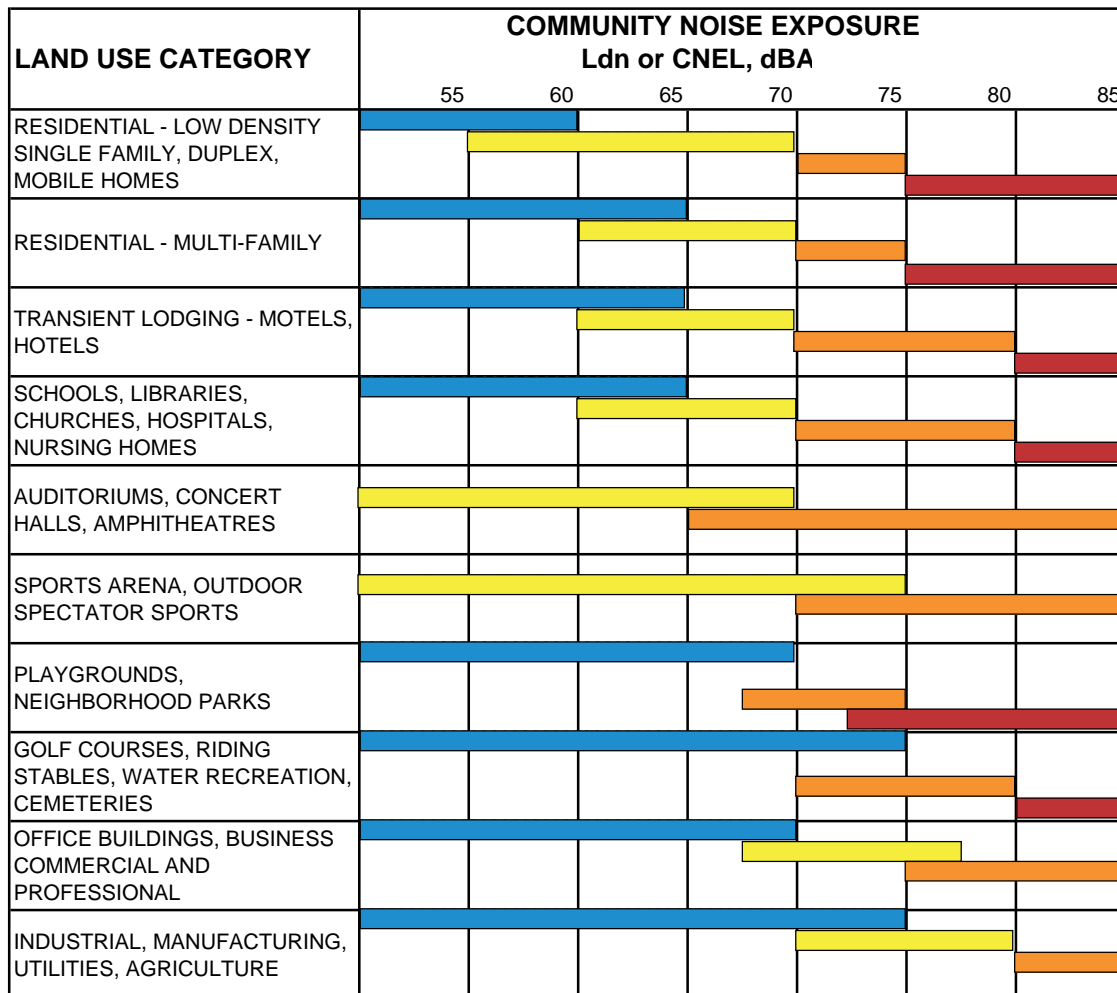
State Regulations. Relevant State noise regulations include those established by the California Department of Health Services and the California Department of Transportation (Caltrans), as well as standards in the California Code of Regulations. The Governor's Office of Planning and Research have also established guidelines regarding sound level and land use compatibility. There are no adopted State policies or standards for ground-borne vibration. However, Caltrans recommends that extreme care be taken when sustained pile driving occurs within 7.5 meters (25 feet) of any building, 15 to 30 meters (50 to 100 feet) of a historic building or near a building in poor condition.

*State of California General Plan Guidelines.* The State of California General Plan Guidelines (California Governor's Office of Planning and Research, 2003) identifies guidelines for the Noise Elements of city and county General Plans, including a sound level/land-use compatibility chart that categorizes, by land use, outdoor Ldn ranges in up to four categories (normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable). These guidelines provide the State's recommendations for city and county General Plan Noise Elements, as shown in Figure 4.11-1. Compliance with the guidelines by the cities and counties is not required, but nonetheless is quite common because many general plan noise elements are based on these guidelines. The noise element guidelines identify the normally acceptable range for low-density residential uses as less than 60 dB, and the conditionally acceptable range as 55–70 dB. The normally acceptable range for high-density residential uses is identified as Ldn values below 65 dB, and the conditionally acceptable range is identified as 60–70 dB. For educational and medical facilities, Ldn values below 70 dB are considered normally acceptable, and Ldn values of 60–70 dB are considered conditionally acceptable. For office and commercial land uses, Ldn values below 70 dB are considered normally acceptable, and Ldn values of 67.5–77.5 are categorized as conditionally acceptable. These overlapping Ldn ranges are intended to indicate that local conditions (existing sound levels and community attitudes toward dominant sound sources) should be considered in evaluating land-use compatibility at specific locations.

*California's Airport Noise Standards.* The State of California has the authority to establish regulations requiring airports to address aircraft noise impacts near airports. The State of California's Airport Noise Standards, found in Title 21 of the California Code of Regulations, identify a noise exposure level of 65 dB CNEL as the noise impact boundary around airports. Within the noise impact boundary, airport proprietors are required to ensure that all land uses are compatible with the aircraft noise environment or the airport proprietor must secure a variance from the California Department of Transportation.







**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.

**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

**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 systems or air conditioning will normally suffice.

**CLEARLY UNACCEPTABLE**  
 New construction or development should generally not be undertaken.

*Guidelines for the Preparation and Content of Noise Elements of the General Plan, California Office of Planning and Research, 2003.*

Noise Compatibility Matrix

Figure 4.11-1

The Aeronautics Division of the California Department of Transportation has published the *California Airport Land Use Planning Handbook* (October 2011). The purpose of the California Airport Land Use Planning Handbook is to provide guidance for conducting airport land use compatibility planning. This handbook includes a section related to noise and states, "The basic strategy for achieving noise compatibility in the vicinity of an airport is to prevent or limit development of land uses that are particularly sensitive to noise. Common land use strategies are ones that either involve few people (especially people engaged in noise-sensitive activities) or generate significant noise levels themselves (such as other transportation facilities or some industrial uses)."

*California Department of Transportation.* 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 uses the NAC discussed above in connection with FHWA. In addition, Caltrans has published the *Traffic Noise Analysis Protocol* for assessing noise levels associated with roadway projects.

Section 216 of the California Streets and Highways Code relates to the noise effects of a proposed freeway project on public and private elementary and secondary schools. Under this code, a noise impact occurs if, as a result of a proposed freeway project, noise levels exceed 52 dBA 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 dBA Leq. If the noise levels generated from roadway sources exceed 52 dBA 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 Ldn 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 Ldn 60 dB. Applicable thresholds are shown in Figure 4.11-1.

*State Aeronautics Act.* The State Aeronautics Act (Public Utilities Code, Section 21670 et seq.) requires the preparation of an Airport Land Use Compatibility Plan (ALUCP) for nearly all public-use airports in the State (Section 21675). The intent of the ALUCP is to encourage compatibility between airports and the various land uses that surround them. Some of the actions that airport operators 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 operators may also consider limitations on airport use but such restrictions can be overridden by the FAA 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.

Local Regulations. To identify, appraise, and remedy noise and vibration problems in local communities, each county and city in the KCAG region 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 Ldn 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.

Kings County has adopted a General Plan policy (N Policy B1.2.1) which establishes significance standards for capacity enhancing roadways or rail projects, or the construction of new roadways or railways. A proposed project would result in a significant noise level increase if it would result in a 5+ dB increase for roadways with a pre-project noise environment (Ldn) of less than 60 dB, if it would result in a 3+ dB increase for roadways with a pre-project noise environment (Ldn) of 60-65 dB, and/or if it would result in a 1.5+ dB increase for roadways with a pre-project noise environment (Ldn) of greater than 65 dB. If the proposed project will result in a significant noise level increase, or the project would cause noise levels to exceed the County's noise standards, noise mitigation measures should be considered to reduce traffic and/or rail noise levels to a level consistent with those standards.

In addition, the following Kings County General Plan policies may apply to individual projects of the 2014 RTP-SCS and are designed to regulate noise levels within the County:

*N Policy A1.1.1: Appropriate noise mitigation measures shall be included in a proposed project design when the proposed new use(s) will be affected by traffic or railroad noise sources and exceed the County's "Noise Standards for New Uses Affected by Transportation Noise Sources" (Table N-7 [herein Table 4.11-2]). Mitigation measures shall reduce projected noise levels to a state of compliance with this standard.*

*N Policy A1.2.1: New development proposals that may be affected by aircraft noise shall be evaluated relative to the noise level standards contained in the County's "Noise Standards for New Uses Affected by Transportation Noise Sources" (Table N-7 [herein Table 4.11-2]).*

*N Policy A1.2.2: New residential development shall be prohibited when proposed within the 70 CNEL or greater noise contours for any military airfield, airport, or helipad within Kings County. Latest available airport noise contours shall be used in determining the extent of airport noise contours. This policy does not pertain to existing residential remodels, expansions or additions, and does not apply to reconstruction of previously existing residences. Noise generated from private airstrips is not applicable to this policy.*



*N Policy A1.2.3: New residential development proposed in airport noise environments within the 60 dB CNEL contours or greater shall be subject to the following conditions:*

- A. Provide minimum noise insulation to 45 dB CNEL within new residential dwellings, including detached single family dwellings, with windows closed in any habitable room.*
- B. Provide disclosure statements to prospective buyers that the parcel is located in an area which may be exposed to frequent aircraft noise events (arrivals, departures, overflights, engine run-ups, etc.).*
- C. An Avigation Easement, on forms provided by the County, shall be recorded with the Kings County Recorder, for each newly created residential parcel or agricultural parcel less than 10 acres in size, or when a building permit is issued on an existing parcel or lot, within any area, or the 60 dBCNEL contour of the Naval Air Station, Lemoore flight patterns as shown on Figure N-8 [herein Table 4.11-3]. Copies shall be filed with the County's Community Development Agency. The Avigation Easement shall be granted to the County of Kings and acknowledge the property is located near a source of aircraft noise and grants the right of flight and unobstructed passage of all aircraft, civilian and military, into and out of the subject public use airport, emergency services heliport, or military airfield.*

*Exceptions: New accessory residential dwellings on parcels zoned Agricultural and within the 60 dB CNEL contours or greater, shall be permitted but would be subject to the conditions listed above.*

*N Policy B1.1.1: Appropriate noise mitigation measures shall be included in a proposed project design when the proposed new use(s) will be affected by or include non-transportation noise sources and exceed the County's "Non-Transportation Noise Standards" (Table N-8 [herein Table 4.11-3]). Mitigation measures shall reduce projected noise levels to a state of compliance with this standard within sensitive areas. These standards are applied at the sensitive areas of the receiving use.*

*N Policy B1.1.3: Noise associated with construction activities shall be considered temporary, but will still be required to adhere to applicable County Noise Element standards.*

*N Policy B1.2.1: A noise analysis shall be prepared in accordance with the County's "Requirements for Acoustical Analyses Prepared in Kings County" (Table N-9 [herein Table 4.11-4]) for capacity enhancing roadways or rail projects, or the construction of new roadways or railways. If the proposed project will result in a significant noise level increase as defined below, or the project would cause noise levels to exceed the County's noise standards (Table N-7 [herein Table 4.11-2]), noise mitigation measures should be considered to reduce traffic and/or rail noise levels to a level consistent with those standards. A significant increase is defined as follows:*

<u>Pre-Project Noise Environment (Ldn)</u>	<u>Significant Increase</u>
Less than 60 dB	5+ dB
60 - 65 dB	3+ dB
Greater than 65 dB	1.5+ dB



*This policy requires only that noise mitigation measures be considered in cases where the significance thresholds described above would be exceeded. However, there are various factors which may affect the feasibility or reasonableness of the mitigation which should be considered during the project environmental review process, including the following:*

- A. The severity of the impact.*
- B. The cost and effectiveness of the mitigation.*
- C. The number of properties which would benefit from the mitigation.*
- D. Aesthetic, safety and engineering considerations.*

*N Policy B1.2.2: If noise-reducing pavement is to be utilized in conjunction with a roadway improvement project, the acoustical benefits of such pavement shall be included in the noise analysis prepared for the project.*

*N Policy C1.1.1: All noise analyses prepared to determine compliance with the noise level standards contained within this Noise Element shall be prepared in accordance with the County's "Requirements for Acoustical Analyses Prepared in Kings County" (Table N-9 [herein Table 4.11-4]).*

*N Policy C1.1.2: Where noise mitigation measures are required to satisfy the noise level standards of this Noise Element, emphasis shall be placed on the use of setbacks and site design, prior to consideration of the use of noise barriers.*

*N Policy C1.1.3: Noise analyses prepared for multi-family residential projects, town homes, mixed-use, condominiums, or other residential projects where floor ceiling assemblies or party-walls are common to different owners/occupants, shall address compliance with the State of California Noise Insulation standards.*

*N Policy C1.2.1: The County shall have the flexibility to consider the application of 5 dB less restrictive exterior noise standards than those prescribed in Tables N-7 (herein Table 4.11-2) and N-8 (herein Table 4.11-3) in cases where it is impractical or infeasible to reduce exterior noise levels within infill projects to a state of compliance with the Table N-7 (herein Table 4.11-2) or N-8 standards. In such cases, the rationale for such consideration shall be clearly presented and disclosure statements and noise easements should be included as conditions of project approval.*

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).



**Table 4.11-2  
Noise Standards for New Uses  
Affected by Transportation Noise Sources**

New Land Use	Sensitive <sup>1</sup> Outdoor Area – CNEL	Sensitive Interior <sup>2</sup> Area – CNEL	Notes
Residential	60	45	5
Residences in Ag. Zones	65	45	6
Transient Lodging	65	45	3, 5
Hospitals & Nursing Homes	60	45	---
Theaters & Auditoriums	---	35	3
Churches, Meeting Halls, Schools, Libraries, etc.	60	40	3
Office Buildings	65	45	3
Commercial Buildings	65	50	3
Playground, Parks, etc.	70	---	---
Industry	65	50	3

Notes:

1. Sensitive areas are defined acoustic terminology sections of the General Plan.
2. Interior noise level standards are applied within noise-sensitive areas of the various land uses, with windows and doors in the closed positions.
3. Where there are no sensitive exterior spaces proposed for these uses, only the interior noise level standard shall apply.
4. Hospitals are often noise-generating uses. The exterior noise level standards for hospitals are applicable only at clearly identified areas designated for outdoor relaxation by either hospital staff or patients.
5. If this use is affected by railroad or aircraft noise, a maximum ( $L_{max}$ ) noise level standard of 70 dB shall be applied to all sleeping rooms with windows closed to reduce the potential for sleep disturbance during nighttime noise events.
6. Due to the noise-generating nature of agricultural activities, it is understood that residences constructed on agriculturally-designated land uses may be exposed to elevated noise levels. As a result, 65 dB CNEL exterior noise level standard is applied to noise-sensitive outdoor areas of these uses.

Source: Kings County 2035 General Plan, 2010

**Table 4.11-3  
Non-Transportation Noise Standards  
Average ( $L_{eq}$ )/Maximum ( $L_{max}$ )<sup>1</sup>**

New Land Use	Outdoor Area <sup>2</sup>		Interior <sup>3</sup>	Notes
	Daytime	Nighttime		
All Residential	55/75	50/70	35/55	---
Transient Lodging	55/75	---	35/55	4
Hospitals & Nursing Homes	55/75	---	35/55	5, 6
Theaters & Auditoriums	---	---	30/50	6
Churches, Meeting Halls, Schools, Libraries, etc.	55/65	---	35/60	6
Office Buildings	60/75	---	45/65	6
Commercial Buildings	55/75	---	45/65	6
Playground, Parks, etc.	65/75	---	---	6
Industry	60/80	---	50/70	6

Notes:

1. The table standards shall be reduced by 5 dB for sounds consisting primarily of speech or music, and for recurring impulsive sounds. If the existing ambient noise level exceeds the standards of the table, then the noise level standards shall be increased at 5dB increments to encompass the ambient.
2. Sensitive areas are defined acoustic terminology section of the General Plan.
3. Interior noise level standards are applied within noise-sensitive areas of the various land uses, with windows and doors in the closed positions.
4. Outdoor activity areas of transient lodging facilities are not commonly used during nighttime hours.
5. Hospitals are often noise-generating uses. The exterior noise level standards for hospitals are applicable only at clearly identified areas designated for outdoor relaxation by either hospital staff or patients.
6. The outdoor activity areas of these uses (if any), are not typically utilized during nighttime hours.

Source: Kings County 2035 General Plan, 2010



**Table 4.11-4**  
**Requirements for Acoustical Analyses Prepared in Kings County**

An acoustical analysis prepared pursuant to the Noise Element shall:

- A. Be the responsibility of the applicant.
- B. Be prepared by qualified persons experienced in the fields of environmental noise assessment and architectural acoustics.
- C. Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions.
- D. Estimate projected future (20 year) noise levels in terms of eh Standards of Tables N-7 (herein Table 4.11-2) and N-8 (herein Table 4.11-3), and compare those levels to the adopted policies of the Noise Element.
- E. Recommend appropriate mitigation to achieve compliance with the adopted policies and standards of the Noise Element.
- F. Estimate interior and exterior noise exposure after the prescribed mitigation measures have been implemented.

#### 4.11.2 Impact Analysis

**a. Methodology and Significance Thresholds.** The analysis of noise impacts considers the effects of both temporary construction-related noise and long-term noise associated with proposed transportation system improvements. Temporary construction noise was estimated based upon levels presented in the May 2006 Federal Transit Administration (FTA) *Transit Noise and Vibration Impact Assessment*.

Pursuant to the State *CEQA Guidelines*, potentially significant impacts would occur if the project would result in:

- *Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;*
- *Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels;*
- *A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project; or*
- *A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.*
- *For a project located 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, exposure of people residing or working in the project area to excessive noise levels;*
- *For a project within the vicinity of a private airstrip, exposure of people residing or working in the project area to excessive noise levels.*

The last two criteria are discussed in Section 4.14, *Less than Significant Environmental Factors*.

Since this document analyzes noise impacts on a program level only, project-level analyses for various projects within the 2014 RTP-SCS will be necessary in the future. The project proponent or local jurisdiction shall be responsible for ensuring adherence to the mitigation measures prior to construction.



Local Thresholds. The four incorporated cities within the region and Kings County each have their own noise standards. Noise standards for the County and the cities within the county typically apply land-use compatibility criteria of 60-65 dBA as the normally acceptable range for residential developments, and interior noise criteria of 45 dBA Ldn, consistent with the overall State recommendations in Figure 4.11-1. As discussed above, the Kings County General Plan also includes a policy (N Policy B1.2.1) which establishes significance thresholds for capacity enhancing roadways or rail projects, or the construction of new roadways or railways.

**b. Project Impacts and Mitigation Measures.** This section describes generalized impacts associated with some of the projects anticipated in the 2014 RTP-SCS.

**Impact N-1      Construction activity associated with transportation improvement projects ~~and development~~ envisioned by the 2014 RTP-SCS would create temporary noise level increases in discrete locations throughout the County. Impacts would be Class II, significant but mitigable.**

Construction Noise. The operation of equipment during the construction of roadway infrastructure, ~~as well as development projects~~ would result in temporary increases in noise in the immediate vicinity of individual construction sites. As shown in Table 4.11-5, average noise levels associated with the use of heavy equipment at construction sites can range from about 76 to 89 dBA at 50 feet from the source, depending upon the types of equipment in operation at any given time and the phase of construction. The highest noise levels generally occur during excavation and foundation development, which involve the use of such equipment as backhoes, bulldozers, shovels, and front end loaders.

Noise generated by construction activity would be variable depending on the project and intensity of equipment use. Roadway widening projects would likely require the operation of many pieces of heavy-duty equipment that generate high noise levels. Alternatively, repainting/restriping would typically be less intense requiring minimal, if any, use of heavy equipment. This conservative analysis assesses construction noise based on the operation of heavy-duty equipment. Noise levels from point sources such as construction sites typically attenuate at a rate of about 6 dBA per doubling of distance. Therefore, areas within 800 feet of construction site with heavy-duty equipment may be exposed to noise levels exceeding 65 dBA. Mitigation Measures N-1(a) through N-1(e) would reduce impacts from traffic noise. Impacts would be less than significant.



**Table 4.11-5  
Typical Construction Noise Levels (in dBA)**

Equipment	Typical Level 25 Feet from the Source	Typical Level 50 Feet from the Source	Typical Level 100 Feet from the Source	Typical Level 200 Feet from the Source	Typical Level 800 Feet from the Source
Air Compressor	87	81	75	69	57
Backhoe	86	80	74	68	56
Concrete Mixer	91	85	79	73	61
Grader	91	85	79	73	61
Paver	95	89	83	77	65
Saw	82	76	70	64	52
Scraper	95	89	83	77	65
Truck	94	88	82	76	64

*Source: Typical noise level 50 feet from the source was taken from FTA, May 2006. Noise levels at 25 feet, 100 feet and 200 feet were extrapolated using a 6 dBA attenuation rate for the doubling of distance. Noise levels are measured in Leq for the expected duration that each piece of equipment is expected to operate. Each noise level assumes the piece of equipment is operating at full power for the expected duration to complete the construction activity. The duration varies widely between each piece of equipment. Noise levels also depend on the model and year of the equipment used. The noise levels assume simultaneous construction activities associated with the respective phase of construction and equipment being used.*

Vibration. Construction-related vibration has the potential to damage structures, cause cosmetic damage (e.g., crack plaster), or disrupt the operation of vibration-sensitive equipment. Vibration can also be a source of annoyance to individuals who live or work close to vibration-generating activities. Heavy construction operations can cause substantial vibration near the source. As shown in Table 4.11-6, the highest impact caused by equipment such as pile drivers or large bulldozers can generate vibrations of 1.518 to 0.089 inches per second of peak particle velocity (PPV) at a distance of 25 feet. Similar to construction noise, vibration levels would be variable depending on the type of construction project and related equipment use.

Typical project construction activities, such as the use of jackhammers, other high-power or vibratory tools, compactors, and tracked equipment, may also generate substantial vibration (i.e., greater than 0.2 inches per second PPV) in the immediate vicinity, typically within 15 feet of the equipment. Through the use of scheduling controls, typical construction activities would be restricted to hours with least potential to affect nearby properties. Thus, perceptible vibration can be kept to a minimum and not result in human annoyance or structural damage.

Some specific construction activities result in higher levels of vibration. Pile driving has the potential to generate the highest vibration levels and is the primary concern for structural damage 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. Depending on the proximity of existing structures to each construction site, the structural soundness of the affected buildings and construction methods, vibration caused by pile driving or other foundation work with a substantial impact component such as blasting, rock or caisson drilling, and site excavation or compaction may be high enough to be perceptible within 100 feet and damage existing structures within 50 feet. Mitigation Measures N-1(a) through N-1(e) would reduce impacts from construction-related vibration. Impacts would be less than significant.



**Table 4.11-6  
Construction Equipment Vibration Levels**

Equipment		PPV at 25 Feet (Inches per Second)	RMS at 25 Feet (Vdb)
Pile Driver (Impact)	Upper Range	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
Hydro 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.

**Mitigation Measures.** Local noise and vibration general plan policies and ordinance requirements would apply to construction activity associated with transportation projects included within the RTP-SCS. In addition, the following mitigation measures N-1(a) through N-1(e) are recommended by KCAG. Sponsor agencies can and should implement the following mitigation measures for applicable transportation projects that result in noise impacts. Project-specific environmental impacts may require these mitigation measures be revised or expanded in response to site-specific conditions:

- N-1(a)** Project sponsors of 2014 RTP-SCS projects shall ensure that, where residences or other noise sensitive uses are located within 800 feet of construction sites, appropriate measures shall be implemented to ensure consistency with local noise ordinance requirements relating to construction. Specific techniques may include, but are not limited to, restrictions on construction timing, use of sound blankets on construction equipment, and the use of temporary walls and noise barriers to block and deflect noise.
- N-1(b)** If a particular project within 800 feet of sensitive receptors requires pile driving, the local jurisdiction in which this project is located shall require the use of pile drilling techniques instead, where feasible. This shall be accomplished through the placement of mitigation measures or conditions on the project during its individual environmental review.
- N-1 (c)** Project sponsors shall ensure that equipment and trucks used for project construction utilize the best available noise control techniques (including mufflers, use of intake silencers, ducts,



engine enclosures and acoustically attenuating shields or shrouds).

- N-1(d)** Project sponsors shall ensure that impact equipment (e.g., jack hammers, pavement breakers, and rock drills) used for project construction be hydraulically or electrical powered wherever feasible to avoid noise associated with compressed air exhaust from pneumatically powered tools. Where use of pneumatically powered tools is unavoidable, use of an exhaust muffler on the compressed air exhaust can lower noise levels from the exhaust by up to about 10 dBA. When feasible, external jackets on the impact equipment can achieve a reduction of 5 dBA. Whenever feasible, use quieter procedures, such as drilling rather than impact equipment operation.
- N-1(e)** Project sponsors shall locate stationary noise sources such as generators as far from sensitive receptors as possible. Stationary noise sources that must be located near existing receptors will be adequately muffled.

Significance After Mitigation. With implementation of local noise control requirements and proposed mitigation, impacts would be reduced to a less than significant level.

**Impact N-2 Implementation of the 2014 RTP-SCS would increase traffic-generated noise levels in ~~Kings County~~ the region on roadways which could expose sensitive receptors to noise in excess of normally acceptable levels. This is a Class II, *significant but mitigable* impact.**

*Traffic Noise.* The 2014 RTP-SCS includes several projects that would potentially increase traffic noise levels. Such projects include the improvements to roads and road widening that would allow increased traffic volumes (see Table 4.11-7). These projects would not in themselves introduce new traffic, but rather are intended to relieve current or projected future traffic congestion or unacceptable safety conditions. However, in some cases, widening and extension projects would accommodate additional traffic volumes and/or relocate noise sources closer to receptors. It should be noted that while traffic may increase in certain locations, the expected number of vehicle miles traveled (VMT) in 2040 would be reduced from 5,731,847 miles without the RTP-SCS to 5,726,759 miles with the RTP-SCS, a reduction of 5,088 VMT (see Section 4.12, *Transportation and Circulation*). As the VMT decreases, noise associated with VMT would also decrease.

*Airports.* The 2014 RTP-SCS does not include any projects or programs that would directly or indirectly increase aircraft operations at the airports in the ~~County~~ region. Therefore, no overall change in the noise environment would occur.

*Rail Operations.* The 2014 RTP-SCS does not include any projects or programs that would directly or indirectly increase rail operations in the ~~County~~ region. Therefore, no overall change in the noise environment would occur.



*Bus Operations.* The 2040 RTP-SCS includes projects to expand bus service by adding morning routes on Kings Area Rapid Transit (KART) Routes 12 and 13. The increased frequency of bus service along existing routes would increase noise exposure. However, the addition of buses to existing routes is unlikely to increase noise by significant levels as these streets already experience afternoon and evening bus service. Impacts would be less than significant.

Mitigation Measures. The following mitigation measures are recommended by KCAG to reduce, minimize or avoid significant adverse environmental impacts. Sponsor agencies can and should implement the following mitigation measures for applicable transportation projects that result in noise impacts. Project-specific environmental impacts may require these mitigation measures be revised or expanded in response to site-specific conditions.

- N-2(a)** If a 2014 RTP-SCS project is located near sensitive uses, the project sponsor shall ensure that a noise survey is conducted to determine potential alternate alignments which allow greater distance from, or greater buffering of, noise-sensitive areas. The noise survey shall be sufficient to indicate existing and projected noise levels, to determine the amount of attenuation needed to reduce potential noise impacts to such uses to an exterior noise level of 65 dBA or less. This shall be accomplished during the project's individual environmental review.
- N-2(b)** -Where new or expanded roadways are found to expose receptors to noise exceeding normally acceptable levels, the project sponsor shall consider various sound attenuation techniques. The preferred methods for mitigating noise impacts will be the use of appropriate setbacks and sound attenuating building design, including retrofit of existing structures with sound attenuating building materials where feasible. In instances where use of these techniques is not feasible, the use of sound barriers (earthen berms, sound walls, or some combination of the two) will be considered. Long expanses of walls or fences should be interrupted with offsets and provided with accents to prevent monotony. Landscape pockets and pedestrian access through walls should be provided. Whenever possible, a combination of elements should be used, including solid fences, walls, and landscaped berms. Determination of appropriate noise attenuation measures will be assessed on a case-by-case basis during a project's individual environmental review pursuant to the regulations of the applicable agency.

Significance After Mitigation. Implementation of the recommended programmatic measures would reduce potential impacts to a less than significant level.

**Impact N-3 — ~~The proposed 2014 RTP-SCS land use scenario would encourage compact development, which may place sensitive receptors in~~**



~~areas with unacceptable noise levels. This is a Class II, significant but mitigable impact.~~

~~The 2014 RTP-SCS is based on a preferred land use and transportation scenario (Scenario #1) which lays out a pattern of future growth emphasizing connectivity of housing and commercial facilities, infill development, and mixed use development. This land use scenario would shift a greater share of future residential and commercial growth within urban areas and near existing transit corridors. New noise sensitive development in infill areas could be exposed to noise levels exceeding the County or City noise standards. Potential sources of noise exposure include: roadway traffic, railway or bus operations, commercial activity, and industrial activity. Impacts are potentially significant.~~

~~Mitigation Measures. Local noise general plan policies and ordinance requirements would apply to development associated with RTP-SCS implementation. The following mitigation measures are recommended by KCAG for future infill and mixed use development pursuant to the RTP-SCS that would result in impacts related noise exposure. Sponsor agencies can and should implement the following mitigation measures for applicable projects that result in noise impacts. Project specific environmental impacts may require these mitigation measures be revised or expanded in response to site specific conditions.~~

~~**N-3** — If a 2014 RTP-SCS project is located in an area with exterior ambient noise levels above local noise standards, the project sponsor shall ensure that a noise study is conducted to determine existing and projected noise levels and feasible attenuation measures needed to reduce potential noise impacts to such uses to an exterior and interior noise level below local standards. Such measures may include, but are not limited to: dual-paned windows, solid core exterior doors with perimeter weather stripping, air condition system so that windows and doors may remain closed, and situating exterior doors away from roads. This shall be accomplished during the project's individual environmental review.~~

~~Significance After Mitigation. Compliance with local general plans and implementation of the programmatic mitigation measure would reduce potential impacts to a less than significant level.~~

**c. Specific RTP Projects That May Result in Impacts.** Table 4.11-7 identifies those projects that may create impacts as discussed in Section 4.11.2.b. Individual projects that involve construction activities would result in Impact N-1, temporary increases in noise and vibration associated with construction. The individual projects that would accommodate additional roadway, freeway, rail, or bus traffic could create significant noise impacts but would not necessarily do so. Additional specific analysis will need to be conducted as the individual projects are implemented in order to determine the actual magnitude of impact. Mitigation measures discussed above would apply to these specific projects. Road widening/extension projects or construction of new roadways have the potential to place roadway traffic noise closer to sensitive receptors. These projects and other individual projects that may accommodate additional roadway or bus traffic are listed in Table 4.11-7.

**Table 4.11-7  
2014 RTP-SCS Local Projects that May Result in Noise Impacts**

Jurisdiction	Route	Project Location	Project Description	Impact	Description of Potential Impact
City of Avenal	Third Ave.	San Joaquin St - SR 33	Overlay and improve curb cuts/ramps	N-1	Potential impacts to noise-sensitive receptors during construction
City of Avenal	Mariposa St	First to Fifth Ave's	Overlay and improve curb cuts/ramps	N-1	Potential impacts to noise-sensitive receptors during construction
City of Avenal	Fifth Ave.	Mariposa St. to SR 269	Overlay and improve curb cuts/ramps	N-1	Potential impacts to noise-sensitive receptors during construction
City of Corcoran	Whitley Ave.	From Otis to Pickerell Ave.	Streetscape, Traffic Calming and Street Improvements	N-1	Potential impacts to noise-sensitive receptors during construction
City of Hanford	W. Lacey Blvd.	Hfd.-Arm to Mall Dr. (Interchange Project)	Widen from 2 to 6 lanes w/ median	N-1, N-2	Potential impacts to noise-sensitive receptors during construction and operation
City of Hanford	W. Lacey Blvd.	Greenfield Ave. to Mall Dr.	Rehabilitate / Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
City of Hanford	13th Ave.	13th Ave. / Grangeville Blvd.	Traffic Signal	N-1	Potential impacts to noise-sensitive receptors during construction
City of Hanford	6th Street	Between Harris and Brown Sts.	Construct Park-n-Ride Facility	N-1, N-2	Potential impacts to noise-sensitive receptors during construction and operation
City of Hanford	Hfd-Arm Rd.	Hfd.- Arm. / Irwin St.	Traffic Signal	N-1	Potential impacts to noise-sensitive receptors during construction
City of Hanford	Houston Ave.	Houston / 11th Ave.	Traffic Signal	N-1	Potential impacts to noise-sensitive receptors during construction
City of Hanford	12th Ave.	Mall Dr. to N. of Lacey	Rehabilitate/ Overlay/ Restripe (4 to 6 lanes)	N-1	Potential impacts to noise-sensitive receptors during construction
City of Hanford	City wide	Various	Bike facility improvements	N-1	Potential impacts to noise-sensitive receptors during construction
City of Hanford	11th Ave.	Ivy St to Grangeville	Rehabilitate / Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
City of Hanford	11th Ave.	11th / Grangeville Blvd.	Intersection Improvements/ Channelization	N-1	Potential impacts to noise-sensitive receptors during construction
City of Hanford	Douty St.	Douty St / Sixth St	Traffic Signal	N-1	Potential impacts to noise-sensitive receptors during construction
City of Hanford	12th Ave.	Houston Ave. to Hfd-Arm	Widen from 2 to 4 lanes w/ median	N-1, N-2	Potential impacts to noise-sensitive receptors during construction and operation
City of Hanford	12th Ave.	12th Ave. / Hume Ave.	Traffic Signal	N-1	Potential impacts to noise-sensitive receptors during construction
City of Hanford	E. Lacey Blvd.	10th Ave. to 9th Ave..	Widen from 2 to 4 lanes w/ left turn pockets	N-1, N-2	Potential impacts to noise-sensitive receptors during construction and operation



**Table 4.11-7  
2014 RTP-SCS Local Projects that May Result in Noise Impacts**

Jurisdiction	Route	Project Location	Project Description	Impact	Description of Potential Impact
City of Hanford	E. Lacey Blvd.	at 9th Ave.	Install Traffic Signals	N-1	Potential impacts to noise-sensitive receptors during construction
City of Hanford	E. Lacey Blvd.	9th Ave. to Sierra Dr.	Widen from 2 to 4 lanes w/ left turn pockets	N-1, N-2	Potential impacts to noise-sensitive receptors during construction and operation
City of Hanford	E. Lacey Blvd.	at Sierra Dr.	Install Traffic Signals	N-1	Potential impacts to noise-sensitive receptors during construction
City of Hanford	Grangeville Blvd.	Douty to 10th Ave.	Rehabilitate / Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
City of Hanford	W. Lacey Blvd.	12 1/2 Ave. to 13th Ave.	Widen from 2 to 4 lanes w/ median	N-1, N-2	Potential impacts to noise-sensitive receptors during construction and operation
City of Hanford	W. Lacey Blvd.	at 12 1/2 Ave	Install Traffic Signals	N-1	Potential impacts to noise-sensitive receptors during construction
City of Hanford	Redington St.	Lacey Blvd. to Grangeville Blvd.	Rehabilitate / Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
City of Hanford	Fargo Ave.	BN&SF to 12th Ave.	Widen from 2 to 4 lanes w/ left turn pockets	N-1, N-2	Potential impacts to noise-sensitive receptors during construction and operation
City of Hanford	Grangeville Blvd.	12th Ave. to 13th Ave.	Widen from 2 to 4 lanes w/ left turn pockets	N-1, N-2	Potential impacts to noise-sensitive receptors during construction and operation
City of Hanford	Grangeville Blvd.	12th Ave. to 13th Ave.	Install Traffic Signals & Pedestrian Facilities	N-1	Potential impacts to noise-sensitive receptors during construction
City of Hanford	Fargo Ave.	12th Ave. to 13th Ave.	Widen from 2 to 4 lanes w/ left turn pockets	N-1, N-2	Potential impacts to noise-sensitive receptors during construction and operation
City of Hanford	Fargo Ave.	12th Ave. to 13th Ave.	Install Traffic Signals & Pedestrian Facilities	N-1	Potential impacts to noise-sensitive receptors during construction
City of Hanford	Grangeville	11th Ave. to 12th Ave.	Rehabilitate / Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
City of Hanford	Hfd.-Arm Rd	12th Ave. 13th Ave.	Widen from 2 to 4 lanes w/ left turn pockets	N-1, N-2	Potential impacts to noise-sensitive receptors during construction and operation
City of Hanford	Hfd.-Arm Rd	at 12th Ave	Install Traffic Signals	N-1	Potential impacts to noise-sensitive receptors during construction
City of Hanford	12th Ave.	Fargo Ave.to Flint Ave.	Widen from 2 to 4 lanes w/ median	N-1, N-2	Potential impacts to noise-sensitive receptors during construction and operation
City of Hanford	12th Ave	Fargo Ave.to Flint Ave.	Install Traffic Signals & Pedestrian Facilities	N-1	Potential impacts to noise-sensitive receptors during construction
City of Hanford	10th Ave.	Hwy 198 to Grangeville blvd.	Rehabilitate / Overlay	N-1	Potential impacts to noise-sensitive receptors during construction



**Table 4.11-7  
2014 RTP-SCS Local Projects that May Result in Noise Impacts**

Jurisdiction	Route	Project Location	Project Description	Impact	Description of Potential Impact
City of Hanford	Houston Ave.	10th Ave. to 11th Ave.	Widen from 2 to 4 lanes w /median	N-1, N-2	Potential impacts to noise-sensitive receptors during construction and operation
City of Hanford	Houston Ave.	10th Ave. to 11th Ave.	Install Traffic Signals & Pedestrian Facilities	N-1	Potential impacts to noise-sensitive receptors during construction
City of Hanford	10th Ave.	Grangeville to Hwy 43	Rehabilitate / Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
City of Hanford	Houston Ave.	11th Ave. to 12th Ave.	Widen from 2 to 4 lanes w/ median	N-1, N-2	Potential impacts to noise-sensitive receptors during construction and operation
City of Hanford	Houston Ave.	11th Ave. to 12th Ave.	Install Traffic Signals & Pedestrian Facilities	N-1	Potential impacts to noise-sensitive receptors during construction
City of Hanford	Grangeville Blvd.	10th Ave to 9 1/4 Ave.	Rehabilitate / Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
City of Hanford	Grangeville Blvd.	9 1/4 Ave. to Hwy 43	Widen from 2 to 4 lanes w/ median	N-1, N-2	Potential impacts to noise-sensitive receptors during construction and operation
City of Hanford	Grangeville Blvd.	9 1/4 Ave. to Hwy 43	Install Traffic Signals & Pedestrian Facilities	N-1	Potential impacts to noise-sensitive receptors during construction
City of Hanford	Fargo Ave.	11th Ave. to Meadow View Ln.	Rehabilitate / Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
City of Hanford	11th Ave.	Grangeville Blvd. to Fargo Ave.	Rehabilitate / Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
City of Hanford	9th Ave.	Lacey Blvd. to Grangeville Blvd.	New arterial roadway -4 lanes w/ median	N-1, N-2	Potential impacts to noise-sensitive receptors during construction and operation
City of Hanford	9th Ave.	Lacey Blvd. to Grangeville Blvd.	Install Traffic Signals & Pedestrian Facilities	N-1	Potential impacts to noise-sensitive receptors during construction
City of Hanford	11th Ave.	Lacey Blvd. to Grangeville Blvd.	Rehabilitate / Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
City of Hanford	11th Ave.	Hfd-Arm Rd. to Lacey Blvd.	Rehabilitate / Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
City of Hanford	9th Ave.	Grangeville Blvd. to Fargo Ave.	New arterial roadway -4 lanes w/ median	N-1, N-2	Potential impacts to noise-sensitive receptors during construction and operation
City of Hanford	9th Ave.	Grangeville Blvd. to Fargo Ave.	Install Traffic Signals & Pedestrian Facilities	N-1	Potential impacts to noise-sensitive receptors during construction
City of Hanford	11th Ave.	Hfd.- Arm. Rd. to Houston Ave.	Rehabilitate / Overlay	N-1	Potential impacts to noise-sensitive receptors during construction





**Table 4.11-7  
2014 RTP-SCS Local Projects that May Result in Noise Impacts**

Jurisdiction	Route	Project Location	Project Description	Impact	Description of Potential Impact
City of Hanford	11th Ave.	Houston Ave. to Idaho Ave.	Widen from 2 to 4 lanes w/ left turn pockets	N-1, N-2	Potential impacts to noise-sensitive receptors during construction and operation
City of Hanford	11th Ave.	Houston Ave. to Idaho Ave.	Install Traffic Signals & Pedestrian Facilities	N-1	Potential impacts to noise-sensitive receptors during construction
City of Hanford	12th Ave.	Hfd-Arm Rd. to Lacey Blvd.	Rehabilitate / Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
City of Hanford	12th Ave.	Lacey Blvd. to Grangeville Blvd.	Rehabilitate / Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
City of Hanford	10th Ave.	Hfd. - Arm. Rd. to Houston Ave.	Widen from 2 to 4 lanes w/ left turn pockets	N-1, N-2	Potential impacts to noise-sensitive receptors during construction and operation
City of Hanford	10th Ave.	Hfd. - Arm. Rd. to Houston Ave.	Install Traffic Signals & Pedestrian Facilities	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	12th Avenue	Liberty St to Grangeville	Plane and Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	Hanford Armona Rd	Front Street to Lemoore Canal	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	14 <sup>th</sup> Ave	Lacey to School Street	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	6 <sup>th</sup> Ave	SR 198 To Fargo	Reconstruct 0.5 mile	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	Grangeville Blvd	R41 to 18th	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	18 <sup>th</sup> Avenue	At Jersey Avenue	Signals and approach work	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	Houston Ave	1st to SR43	some grind & patch	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	9 ¼ Ave	Grangeville to Lacey	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	Hanford Armona Rd	Elks Meadow to SR41	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	Lacey Blvd	At 13 <sup>th</sup> Avenue	Signals and bridge work	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	10 ½ Ave	Kansas to Nevada	widen to 28 feet without increasing number of lanes	N-1, N-2	Potential impacts to noise-sensitive receptors during construction and operation
Kings County	Flint Ave	SR43 to 12th	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction



**Table 4.11-7  
2014 RTP-SCS Local Projects that May Result in Noise Impacts**

Jurisdiction	Route	Project Location	Project Description	Impact	Description of Potential Impact
Kings County	11 th Ave	Houston to Idaho	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	Kansas Ave	4th Avenue to SR43	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	Kansas Ave	14th to 16th	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	14th Ave	School Street to Excelsior	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	Avenal Cutoff Rd	Nevada Ave to I-5	Install right turn and acceleration lanes	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	County Intersections	Various Locations	Install right turn lanes and flashing beacons	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	10th Ave	Idaho to Kansas	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	Houston Ave	10th to 10 1/2)	reconstruction	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	Grangeville Blvd	12 ½ to 15th	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	18th Ave	SR198 to Iona	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	Jackson Ave	SR43 to 11th)	reconstruct 1.5 miles	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	Jackson Ave	11th to 14th	reconstruct 1 mile	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	Jackson Ave	14th to 17th (widen to 28 feet)	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	12th Ave	Hume to Idaho	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	Excelsior Ave	0.25 mile west of 12th to SR 43	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	Excelsior Ave	14 1/2 to Kings River	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	Ward & Hubert Drive, Bernard, Cyril Place	Fargo - 12th to 14th	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	Grangeville Blvd	SR41 to 22nd Avenue	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction



**Table 4.11-7  
2014 RTP-SCS Local Projects that May Result in Noise Impacts**

Jurisdiction	Route	Project Location	Project Description	Impact	Description of Potential Impact
Kings County	Houston Ave	SR43 to 10th Avenue	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	Lacey Blvd	18th to SR41	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	6th Ave	Utica to Racine	reconstruct 1.5 miles	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	Laurel Ave	SR41 to 18th Avenue	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	14th Ave	Houston to Jersey	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	6th Ave	Kern County Line to ½ mile North	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	Utica Ave	20th to 25th	reconstruct 1 mile	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	18th Ave	Iona to Jersey	Install left turn lane	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	Front St	Hanford Armona Road to 14th	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	6th Ave	Fargo to Excelsior	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	Houston Ave	13th to 14th	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	Grangeville Blvd	SR43 to 6th	Reconstruct	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	Grangeville Blvd	5th to 6th	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	Grangeville Blvd	1st to 2 1/2 Ave	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	Grangeville Blvd	2 1/2 Ave to Highline Canal	reconstruct	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	Grangeville Blvd	Highline Canal to 5th Avenue	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	18th Ave	Laurel to Kansas	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	10th Ave	Nevada to Pueblo	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	10th Ave	Redding to Seattle	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction



**Table 4.11-7  
2014 RTP-SCS Local Projects that May Result in Noise Impacts**

Jurisdiction	Route	Project Location	Project Description	Impact	Description of Potential Impact
Kings County	10th Ave	Pueblo to Redding	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	10th Ave	Seattle to Utica	CMAQ Seal Coat	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	14th Ave	Jersey to Kansas	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	Excelsior Ave	SR 41 to 22nd	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	Excelsior Ave	R43 to 6th	reconstruct 1 mile	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	Laurel Ave	Avenal Cut-off to SR41	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	Nevada Ave	Avenal Cut-off to SR41	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	Avenal Cut Off	SR 198 to 25th	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	9th Ave	R198 to Houston	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	Utica Ave	11th to 16th	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	6th Ave	Utica to Virginia	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	6th Ave	Virginia to Xavier Ave	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	6th Ave	Kern County Xavier Ave	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	Virginia Ave	4th to 6th	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	Utica Ave	16th to 20th	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Kings County	Utica Ave	6th to 11th	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
KCAPTA	13	Hanford/Stratford/Kettleman /Avenal	Add morning route	N-1, N-2	Potential impacts to noise-sensitive receptors during construction and operation
KCAPTA	12	Hanford/Corcoran	Add morning route	N-1, N-2	Potential impacts to noise-sensitive receptors during construction and operation
KCAPTA		County wide	Bus intelligent system	N-1	Potential impacts to noise-sensitive receptors during construction



**Table 4.11-7  
2014 RTP-SCS Local Projects that May Result in Noise Impacts**

Jurisdiction	Route	Project Location	Project Description	Impact	Description of Potential Impact
Lemoore	Smith Street	Magnolia St. to Oleander Dr.	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Lemoore	Cinnamon Drive	19th Ave to Hill Dr.	Bicycle/ Pedestrian Facilities	N-1	Potential impacts to noise-sensitive receptors during construction
Lemoore	Bush and 19 1/2 Ave	Intersection	Install Traffic Signal	N-1	Potential impacts to noise-sensitive receptors during construction
Lemoore	Bush & Belle Haven	Intersection	Install Traffic Signal	N-1	Potential impacts to noise-sensitive receptors during construction
Lemoore	19th and Cedar	Intersection	Install Traffic Signal	N-1	Potential impacts to noise-sensitive receptors during construction
Lemoore	Hanford-Armona Rd and Cinnamon	Intersection	Install Traffic Signal	N-1	Potential impacts to noise-sensitive receptors during construction
Lemoore	Fox and Cinnamon	Intersection	Install Traffic Signal	N-1	Potential impacts to noise-sensitive receptors during construction
Lemoore	19 <sup>th</sup> Avenue	Bush Street to Cedar Lane	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Lemoore	Bush Street	19 ½ Ave. to 19 <sup>th</sup> Ave.	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Lemoore	C Street	Olive St to Hill St.	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Lemoore	Cedar Lane	19 <sup>th</sup> Ave. to Mallard	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Lemoore	Cinnamon Drive	Basil St. to Daphne Lane	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Lemoore	Vine Street	Bush St. to SR 198	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Lemoore	Hickory Drive	Vine St. to Oakdale Lane	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Lemoore	Silverado Drive	19 <sup>th</sup> Ave. to Marin Dr.	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Lemoore	Olive Ave.	B St. to Redwood Ln.	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Lemoore	Oakdale Lane	Vine St. to Lum Ave.	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Lemoore	E Street	Fox St. to D St.	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction



**Table 4.11-7  
2014 RTP-SCS Local Projects that May Result in Noise Impacts**

Jurisdiction	Route	Project Location	Project Description	Impact	Description of Potential Impact
Lemoore	W. Deodar Lane	Spruce Ave to Glendale Ave.	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Lemoore	S. Byron Ave	Bush St to South End	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Lemoore	Cambridge Drive	Bush St. to Olive St.	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Lemoore	E. D Street	Lemoore Ave to Smith St.	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Lemoore	W. Burlwood Lane	Lemoore Ave. to Juniper Lane	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Lemoore	Bush Street	Lemoore Ave. to D St.	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Lemoore	W. D Street	Bush St. to Olive St.	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Lemoore	Hanford Armona Road	Lemoore Ave to Liberty Dr.	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Lemoore	Hanford Armona Road	Liberty Drive to 19 <sup>th</sup> Ave.	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Lemoore	Hanford Armona Road	19 <sup>th</sup> Ave to SR 41	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Lemoore	Iona Ave.	Vine St. to 19 <sup>th</sup> Ave	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Lemoore	Lemoore Ave	SR 198 to Bush St.	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction
Lemoore	Lemoore Ave.	UPRR to Cinnamon Drive	Overlay	N-1	Potential impacts to noise-sensitive receptors during construction



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## 4.12 TRANSPORTATION AND CIRCULATION

This section describes the County's existing transportation facilities and circulation system, outlines thresholds and performance standards used to assess potential impacts, and identifies impacts and measures to mitigate impacts of the 2014 RTP-SCS. The RTP-SCS focuses on transportation projects of regional significance; therefore, the setting discussion and impact analysis provided in this section focuses on components of the regional transportation network (i.e., state highways, major arterials, transit services, etc.). The 2014 RTP-SCS is intended to improve transportation conditions within Kings County. Traffic volumes were forecasted utilizing the Kings County Association of Governments (KCAG) Regional Travel Demand Forecast Model.

### 4.12.1 Setting

The countywide regional transportation system includes streets and highways, public transit, rail, aviation, and bicycle and pedestrian facilities. This section describes the existing characteristics of these components.

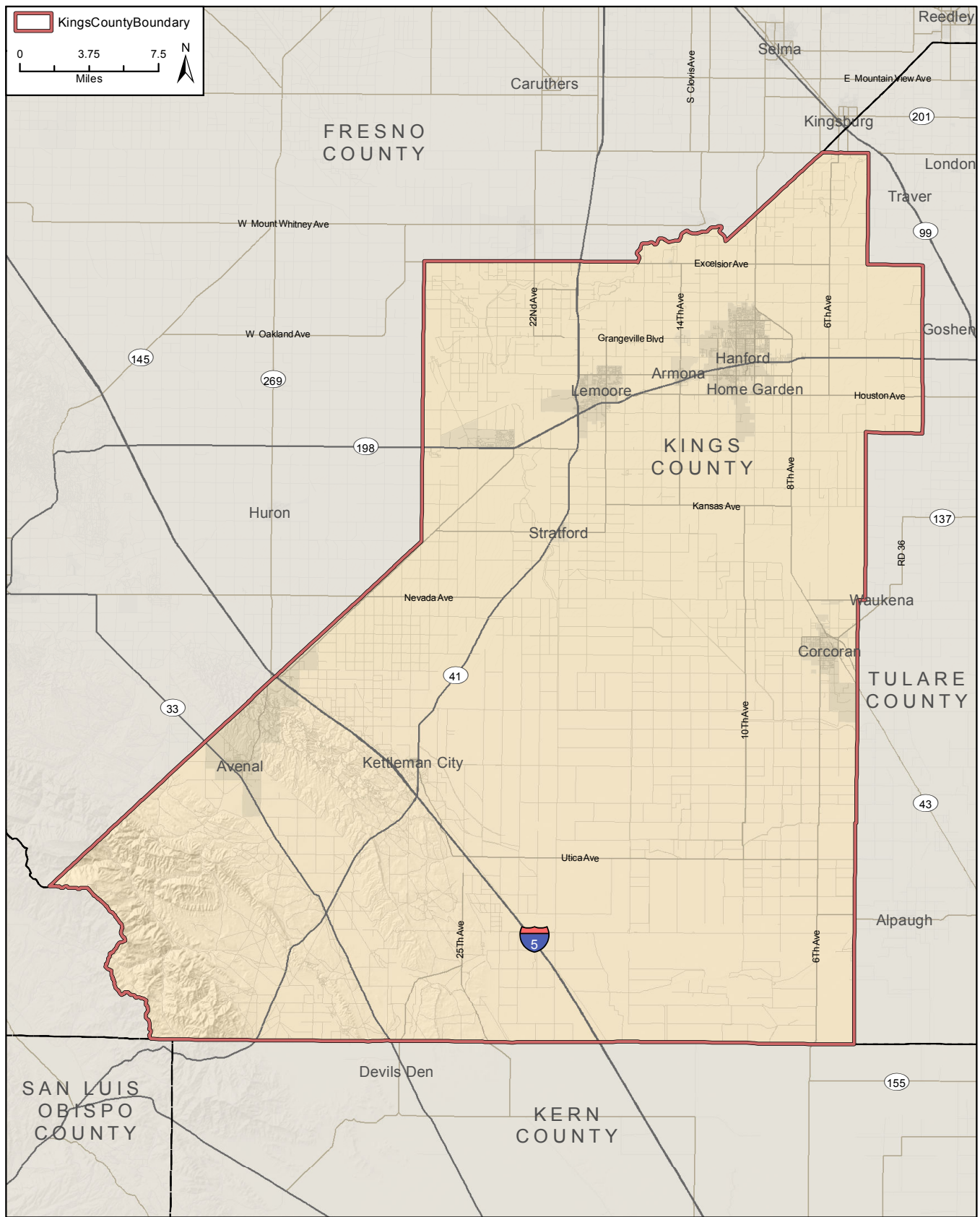
**a. Roadway Network.** Kings County contains approximately 944 miles of county roads, 386 miles of city streets, 130 miles of State Highways, and 27 miles of Interstate Highways (KCAG, Regional Transportation Improvement Program, 2010). Figure 4.12-1 shows Kings County's regional setting and relationship to the State Route system, nearby counties, cities and communities.

The 2014 RTP-SCS identifies and examines the most-used routes which serve regional, rather than merely local, transportation demands. KCAG classifies these roadways as Interstates, Major Arterials, Minor Arterials, or Collectors. Major Arterials serve the high-volume corridors that connect the major traffic generators. Minor Arterials serve less concentrated traffic generating areas, acting as boundaries to neighborhoods and collect traffic from Collector streets. The prime function of Minor Arterial streets is the movement of through traffic; however, they also provide direct access to residential areas and neighborhoods, collecting traffic from local access streets and distributing it to the arterial system. Minor Collector streets serve less traffic than Major Collectors.

Kings County contains Interstate 5, as well as several Major Arterials, such as State Routes 41, 43, 137 and 198. Examples of some of the Minor Arterials in Kings County include 6<sup>th</sup> Avenue, 10<sup>th</sup> Avenue, 10 ½ Avenue, 12<sup>th</sup> Avenue, Avenal Cutoff Road, Excelsior Avenue, Grangeville Boulevard, Houston Avenue, Idaho Avenue, Kansas Avenue, Whitley Avenue, State Route 33 and State Route 43. Examples of some of the Collectors in the regional system include 16<sup>th</sup> Avenue, 18<sup>th</sup> Avenue, 22<sup>nd</sup> Avenue, Flint Avenue, Grangeville Bypass, Lacey Boulevard and Laurel Avenue. Figure 4.12-1 shows Kings County's regional setting and its relationship to the State Route system. Figure 4.12-2 illustrates the regional roadway network and associated circulation designations.



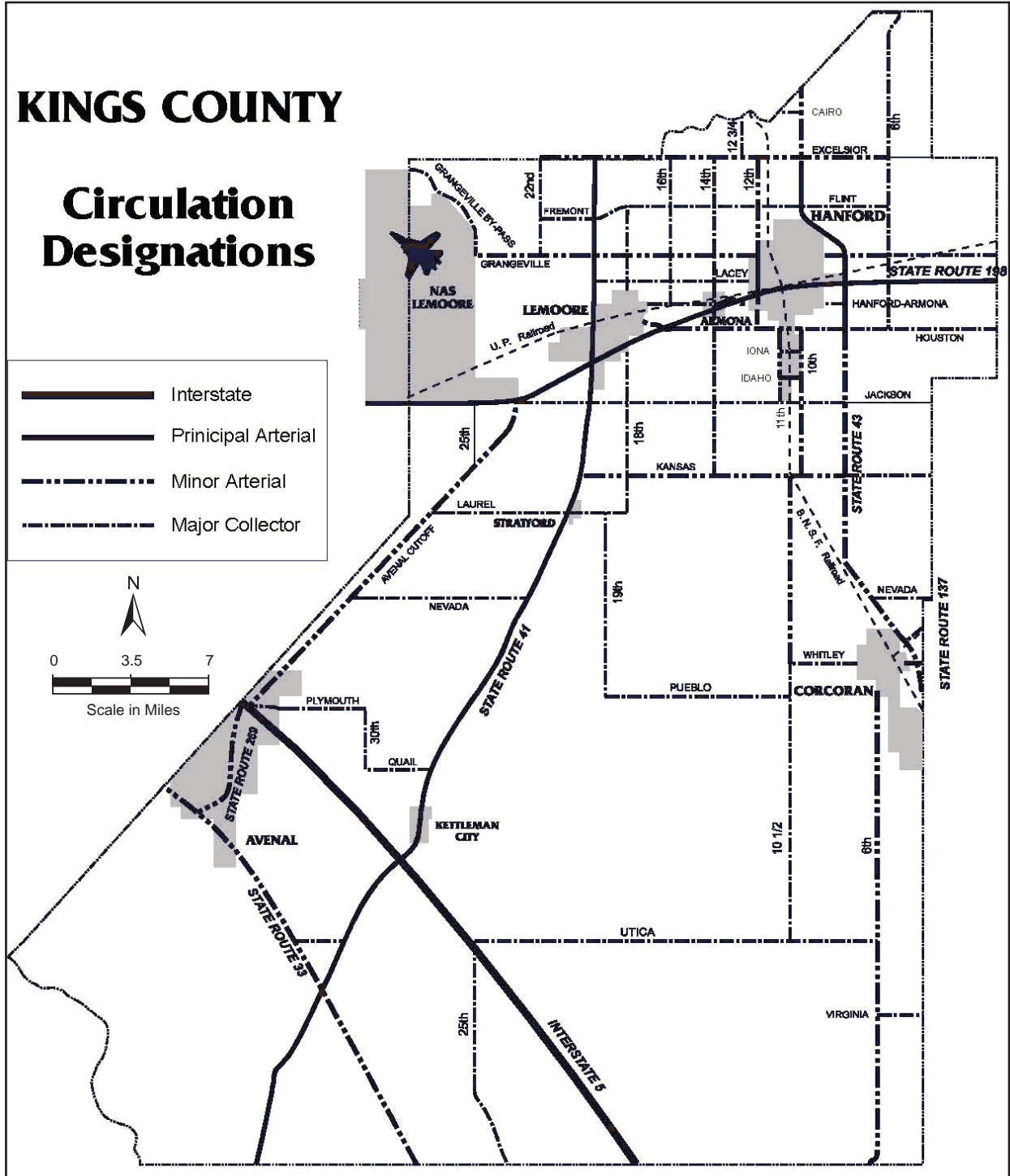




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Regional Setting and State Route System

Figure 4.12-1



Source: Kings County, 2007.

Circulation Designations

Figure 4.12-2

State Routes play a major role in Kings County’s transportation system. State Route traffic in Kings County is generally composed of farm-to-market, commuter, and business trips. Local roads are utilized extensively for the movement of agricultural products. With increased urban population in the county, an increased percentage of commuter and business trips are occurring. Because of the interrelationship between urban and rural activities (employment, housing, services, etc.) and the low average density/intensity of land uses, the private automobile is the dominant mode of travel for residents in Kings County (Kings County 2011 Regional Transportation Plan Environmental Impact Report, Kings County Association of Governments, April, 2010).

Operations. A variety of performance measures are used to assess transportation systems. Depending on the type of performance evaluation required, performance measures may be very specific and focus on specific intersections or roadway segments, or performance measures may be aggregated to evaluate the overall operation of a regional transit system. A regional travel model typically only contains information on the number of lanes and link capacity on roadway segments and lacks information detailed enough to calculate accurate intersection information. Because of the programmatic nature of the proposed 2014 RTP-SCS, the performance measures discussed herein are aggregated to evaluate the overall performance of the region’s transportation system based on the follow performance measures:

- Vehicles miles traveled (VMT);
- Congested Vehicle Miles Traveled (CVMT); and
- Average travel time per person trip.

Vehicle miles traveled (VMT) define the number of miles traveled within Kings County under baseline conditions and how those numbers would change in future years conditions with and without implementation of the 2014 RTP-SCS. Increased VMT is anticipated with regional growth that would occur with or without the project. An increase in VMT does not necessarily reflect deficient traffic operations. Rather, it shows how many miles would be traveled county-wide under varying scenarios.

Congested Vehicle Miles Traveled (CVMT) measures the number of vehicle miles traveled in congested conditions. Congested conditions occur when the volume-to-capacity (V/C) ratio is greater or equal to 1.0 during peak periods (7:00 A.M. -9:00 A.M. and 4:00 P.M. - 6:00 P.M.). In other words, during periods of the day when traffic volumes are highest, volumes exceed the capacity of the roadway. Average travel time per person trip measures the average amount of time that people travel between their origin and destination in minutes. Table 4.12-1 shows the existing (2013) daily VMT (assumes SB 375 off-model adjustments), CVMT and average travel time per person trip for Kings County.

**Table 4.12-1  
Existing (2013) Performance Measures**

2013 VMT	2013 CVMT	2013 Average Trip Time (minutes)
2,187,814	90,388	8.74



**b. Public Transit.** Public transit needs are served by the Kings Area Rural Transit (KART) and the Corcoran Area Transit (CAT). Kings County Area Public Transit Agency (KCAPTA) consists of Kings County and Avenal, Corcoran, Hanford, and Lemoore officials that oversee the operations of the local transit providers.

KART is the countywide public rural and urban transportation provider. KART is the primary transportation outlet linking Kings County's rural and unincorporated communities to other communities within the region. KART provides the City of Hanford with eight interconnected, regular fixed-route service to most other communities in the County and daily weekday service to Visalia and Fresno. KART also provides dial-a-ride service by reservation ([www.mykartbus.com](http://www.mykartbus.com), accessed May 6, 2014).

The City of Corcoran (CAT) operates Dial-a-Ride service Monday through Friday from 6:30 a.m. to 5:30 p.m. The Corcoran Depot is open from 8:00 a.m. to 5:00 p.m. weekdays and from 8:00 a.m. to 5:00 p.m. on Saturdays. The City's Dial-a-Ride service coordinates with AMTRAK's schedule for passenger service to and from the station, with KART for service at the AMTRAK station and with the Corcoran Prison Visitors Center to provide service to prison visitors. The Corcoran Depot serves as a transportation hub where CAT services connect with KART and Amtrak. Although the depot is not an official Amtrak Depot, the facility provides a self-serve Amtrak ticket dispenser for travelers and provides a centralized passenger link for Amtrak, KART and CAT.

**c. Rail Transportation.** Rail service within the County includes the Amtrak "San Joaquin" passenger rail line, and freight rail system utilized by industrial, manufacturing and agricultural businesses throughout the San Joaquin Valley. Approximately 67 miles of rail lines exist within the county. Passenger rail service in the county (six round trips daily) are provided by Amtrak on its San Joaquin service, with rail stations located in Hanford and Corcoran. Amtrak provides a direct bus connection between Bakersfield and Los Angeles Union Station. Amtrak also operates bus service from Paso Robles and Visalia that connects with the Hanford Depot ([www.amtrak.com](http://www.amtrak.com), accessed May 6, 2014).

The Burlington Northern & Santa Fe (BN&SF) Railroad and the San Joaquin Valley Railroad provide freight rail service in Kings County. BN&SF connects Kings County to Sacramento and Bakersfield while the San Joaquin Valley Railroad connects to Huron to the west and Visalia and Porterville to the east (County of Kings General Plan, January 26, 2010).

**d. Air Transportation.** All public-use and private airports in Kings County are used for General Aviation (i.e., smaller, recreational or business) aircraft. There is no commercial air passenger service within the county. The Kings County Region has two public airports (Hanford Municipal Airport and Corcoran Airport) and one military airport (Naval Air Station Lemoore). Hanford Municipal Airport serves the majority of aviation demand in Kings County. There is one charter service available and approximately 70 aircraft are based at the airport. All types of General Aviation aircraft use the facility including recreation and business aircraft. The average daily aircraft operation in 2005 was approximately 38 with 30% of those being single engine propeller aircraft. Annual operations are forecasted to be 13,800 and the number of based aircraft is expected to be 128 in 2025. The City of Hanford released an updated master plan in May 2007. Corcoran Airport serves as a basic utility airport with 16 based planes. The



airfield is used primarily by a fleet of crop dusters. Approximately 5,000 operations originate from the field at present. Single engine propeller aircraft traffic will increase to 8,100 and the number of based aircraft are expected to be 33 by the year 2020 (Caltrans) (County of Kings General Plan, January 26, 2010). The Lemoore Naval Air Station (LNAS) is one of four Navy master jet bases in the United States, and is the home port for all active-duty, light-attack aircraft squadrons assigned to the Pacific Fleet. The station is located in the western sections of Kings and Fresno Counties.

**e. Bicycle Facilities.** Kings County offers a relatively level topography that allows for the opportunity to utilize bicycle facilities. KCAG adopted the 2011 Kings County Regional Bike Plan to demonstrate a sound planning environment. The current bicycle plan updated the 2005 plan and outlines safety concerns, planned improvements, bicycle maps and funding opportunities. The Regional Bicycle Plan identifies various phases of planning and the implementation of bikeway facilities within the urban area boundary. Most transit carriers provide bike racks on buses to enhance the use of transit and bicycling within Kings County. AMTRAK also provides bicycle storage on the train for inter-city travel. The State of California identifies bicycle facilities in three classifications, according to the degree of exclusiveness with which the paths are preserved for bicycle use. These are described below.

*Class I Bike Path.* Provides a completely separate right of way designated for exclusive use of bicycles and pedestrians with cross-flows by motorists minimized.

*Class II Bike Lanes.* Provides a restricted right-of-way through signs and pavement striping designated for the exclusive or semi-exclusive use of bicycles with through travel by motor vehicles or pedestrians prohibited, but with vehicle cross-flows by pedestrians and motorists permitted.

*Class III Bike Route.* Provides a right-of-way designated by signs and is shared with pedestrians or motorists (no pavement stripes or bicycle lane designation markers).

In addition to the above classifications, the 2011 Regional Bicycle Plan recommends the use of two additional types of bicycle facilities: touring and shared sidewalks. Touring facilities are streets, county roads, and state highways which cannot be given a formal designation (i.e. Class I, II, or III) because of cost or liability concerns. These are used as a primary cycling route by more experienced (and typically long-distance) cyclists. Sidewalk bikeways are wide sidewalks (approximately 10 feet wide) which are intended to be shared by both bicyclists and pedestrians. Sidewalk bikeways should be provided on both sides of streets (to reduce the occurrence of "wrong-way" driving by bicyclists). Although this facility is recognized, due to the high incidence of bicycle-pedestrian collisions, use of sidewalks as Class III bikeways is discouraged for safety reasons.

**f. Pedestrian Facilities.** The pedestrian facilities in Kings County consist of sidewalks, paths, and over-crossings built for pedestrians. The system also includes neighborhood and park path systems, and dedicated trail facilities that are shared with bicyclists and other users.

### **g. Regulatory Setting.**

#### Federal.

MAP-21. The most recent federal transportation legislation, the Moving Ahead for Progress in the 21<sup>st</sup> Century Act (MAP-21), was enacted in 2012. Through the RTP development process, MAP-21 encourages KCAG to:

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

Specifically, MAP-21 requires that the RTP planning process provide for consideration of projects and strategies that will:

- (A) *support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;*
- (B) *increase the safety of the transportation system for motorized and non-motorized users;*
- (C) *increase the security of the transportation system for motorized and non-motorized users;*
- (D) *increase the accessibility and mobility of people and freight;*
- (E) *protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns;*
- (F) *enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;*
- (G) *promote efficient system management and operation; and*
- (H) *emphasize the preservation of the existing transportation system.<sup>1</sup>*

The 2014 RTP-SCS discusses in detail how these requirements are met.

*National Environmental Policy Act (NEPA).* The National Environment Policy Act of 1969 (42 U.S.C. § 4321 et seq.) requires federal agencies to assess the possible environmental consequences of projects which they propose to undertake, fund, or approve. While the 2014 RTP-SCS is not subject to NEPA, individual federally-funded programs or projects requiring federal approval will be subject to a NEPA evaluation at the time of project implementation.

State. State requirements for long-range transportation plans are similar to the federal regulations. However, key additional requirements described in Government Code Section 65080 include:

- compliance with CEQA;
- consistency with State Transportation Improvement Program;

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<sup>1</sup> 23 U.S.C. §134(h)(1).



- use of program level performance measures that include goals and objectives; and
- RTPs must include a policy element, an action element, and a financial element.

Plans must also include a Sustainable Communities Strategy (see Senate Bill 375 (SB 375) discussion below).

*California Transportation Commission Regional Transportation Plan Guidelines.* The CTC publishes and periodically updates guidelines for the development of long range transportation plans that include KCAG's 2014 RTP-SCS. Pursuant to Government Code Section 65080(d), each regional transportation planning agency (RTPA) is required to adopt and submit an updated regional transportation plan (RTP) to the California Transportation Commission (CTC) and the Department of Transportation (Caltrans) every four years. KCAG is the designated RTPA for Kings County.

Under Government Code Section 14522, the CTC is authorized to prepare guidelines to assist in the preparation of RTPs. The CTC's RTP guidelines suggest that projections used in the development of an RTP should be based upon available data (such as from the Bureau of the Census), use acceptable forecasting methodologies, and be consistent with the Department of Finance baseline projections for the region. The guidelines further state that the RTP should identify and discuss any differences between the agency projections and those of the Department of Finance. The most recent update to the RTP guidelines was published in 2010, and includes new provisions for complying with Senate Bill 375 (see below), as well as new guidelines for regional travel demand modeling. The regional travel demand model guidelines are "scaled" to different sizes of MPO's. KCAG is included in the "B" grouping of all MPO's. Groupings range from A through E with E being the most complex and A being the least complex.

*SB 375.* The Sustainable Communities Strategy and Climate Protection Act, SB 375 (codified at CAL.GOV'T CODE §§ 14522.1, 14522.2, 65080.01, 65080, 65400, 65583, 65584.01, 65584.02, 65584.04, 65587, 65588; CAL. PUB. RES. CODE §§2161.3, 21155, 21159.28), is a law passed in 2008 by the California legislature that requires each MPO to demonstrate, through the development of an SCS, how its region will integrate transportation, housing, and land use planning to meet the greenhouse gas (GHG) reduction targets set by the State. In addition to creating requirements for MPOs, it also creates requirements for the California Transportation Commission and California Air Resources Board (ARB). A complete description of SB 375 including GHG reduction targets is provided in Section 2.0, *Project Description*.

### Regional.

*2011 Regional Transportation Plan for Kings County (RTP).* The RTP was updated in 2007 and most recently in 2011. Previous updates did not contain a Sustainable Communities Strategy, as this is a new requirement pursuant to SB 375. A comprehensive program environmental impact report was prepared for the 2011 RTP update to satisfy CEQA requirements. The 2011 RTP update lists roadway projects to improve the transportation system during the 2010-2035 planning period. Although a number of projects from the 2011 RTP have been completed, many have not and have been incorporated into the 2014 RTP-SCS.



### 4.12.2 Impact Analysis

**a. Methodology and Significance Thresholds.** Thresholds of significance to determine whether implementation of the 2014 RTP-SCS would result in significant traffic/circulation impacts were chosen based on parameters against which the effects of the 2014 RTP-SCS can be measured by available modeling tools. The thresholds of significance outlined in this section are derived from the policies and practices of KCAG, as well as the performance standards detailed in the 2014 RTP-SCS.

Traffic Performance Standards and Thresholds. Traffic projections for the 2014 RTP-SCS were generated by KCAG's network travel demand model. Regional travel demand models typically do not have sufficient network and zone detail to allow prediction of intersection turning volumes and delays when estimating travel time and transportation system performance. A regional travel model typically only contains information on the number of lanes and link capacity on roadway segments. However, it lacks information detailed enough to calculate accurate intersection information. As such, the analysis is primarily based on average travel time per capita for the region.

The travel demand model allows KCAG to obtain an understanding of the transportation network's performance characteristics (e.g., vehicle speeds, volume to capacity relationships, travel time, vehicle miles of travel, fuel consumption, and vehicle emissions) and estimate how socio-economic changes (e.g., population increases, land use development) will impact travel demand in the County. Furthermore, consequences of future changes, or absence of change, to the transportation system itself (e.g., building new facilities, improving existing facilities, or doing nothing at all) can be analyzed.

The 2014 RTP-SCS establishes performance indicators for the overall regional transportation system based on model outputs of the Travel Model. For this analysis, the following performance indicators are used to determine potential impacts to the transportation system.

- Vehicles miles traveled;
- Congested VMT; and
- Average travel time per capita.

It is important to emphasize that population growth, urbanization and volume of average daily traffic generated in the KCAG region will increase by 2040. This will occur with or without implementation of the 2014 RTP-SCS as a result of a range of demographic and economic factors independent of policy and land use decisions by KCAG and its member agencies. In light of this, the analysis below describes operational changes relative to both a year 2040 baseline scenario and a current (2013) baseline. The evaluation describes the full effect of the proposed 2014 RTP-SCS in combination with future growth that would already occur, as compared to existing baseline conditions. However, impacts and mitigation measures for these environmental issue areas are based on the increment of physical change resulting from the 2014 RTP-SCS, rather than the future regional growth that would occur regardless of whether the plan is adopted and implemented.





The criteria for determining whether the 2014 RTP-SCS would have significant environmental impacts related to transportation and traffic were based in part on the environmental checklist in Appendix G of the State CEQA Guidelines (14 CCR 15000 et seq.) and performance measures established by KCAG. According to the State CEQA Guidelines, significant impacts to transportation and traffic would occur if the plan would:

- *Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways pedestrian and bicycle paths, and mass transit;*
- *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; or*
- *Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.*

In accordance with thresholds established by KCAG, the 2014 RTP-SCS would have a significant impact if the plan would result in:

- *Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks;*
- *Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); or*
- *Result in inadequate emergency access.*

These additional criteria are related to project specific analyses that would occur in the future as projects within the RTP-SCS undergo environmental review. Thus, they are not used herein to determine whether significant traffic/transportation impacts would occur as a result of the 2014 RTP-SCS.

Transit Performance Standards. The Kings County Transit Development Plan (January, 2009) is intended to identify the present transit operations in Kings County provided by both KART and CAT to determine future service performance requirements. The service standards shown in Table 4.12-2 were incorporated into the Plan to test the success of services and identify any performance problems which may arise. The following performance standards are provided for reference purposes:

**Table 4.12-2  
 Kings County Transit Performance Standards**

<b>PUBLIC TRANSIT SYSTEM GOALS</b>	<b>KART</b>	<b>CAT</b>
Fare Box Ratio	20%	16%
Avg. Fare per Passenger	40¢	85¢
Cost per Passenger	\$2.50	\$5.25
Operating Cost per Hour	\$32.00	\$16.00 <sup>1</sup>
Passengers per Hour	15.00	6.20 <sup>1</sup>
Passengers per Mile	1.00	0.50 <sup>1</sup>

*Source: Kings County Transit Development Plan, January, 2009.  
 1 – Applies to dial-a-ride service only*



Bicycle and Pedestrian Facilities Standards. KCAG released the Kings County Regional Bicycle Plan in 2011. The primary goals of the regional plan are to update the bikeway network, create uniformity in policies and design, identify funding opportunities, and evaluate programs. Other than a section addressing design standards for bicycle facilities, no specific performance standards addressing operation of the facilities are included. No pedestrian facility standards for Kings County were identified.

**b. Project Impacts and Mitigation Measures.** This section describes generalized impacts associated with some of the projects anticipated in the RTP. Section 4.12.2(d) describes the projects that could result in the impacts discussed in this section.

**Impact T-1 Total vehicle miles traveled on freeways and roadways in 2040 would increase when compared to existing (2013) baseline conditions. However, implementation of the 2014 RTP-SCS would reduce overall VMT, CVMT and average trip time per person when compared to 2040 conditions without the 2014 RTP-SCS. Impacts would be Class III, less than significant.**

Two forecasts were generated for the 2014 RTP-SCS; the 2040 'without project' scenario, which accounts for future growth without implementation of the 2014 RTP-SCS, and the 2040 'with project' scenario, which accounts for future growth and all transportation projects envisioned by the 2014 RTP-SCS.

Table 4.12-3 shows total system-wide VMT in 2040 for roadways throughout the county. Table 4.12-4 shows CVMT for 2040 conditions with the 2014 RTP-SCS in comparison to no project conditions. Table 4.12-5 shows the average travel time per person in Kings County for 2040 conditions with the 2014 RTP-SCS in comparison to no project conditions.

The VMT increase would result primarily from population growth anticipated throughout the region by 2040. Growth projections indicate that population in the KCAG region is expected to grow by 75,600 people, an increase of approximately 31%, between 2013 and 2040. Thus, the increase in VMT is not necessarily attributed to the 2014 RTP-SCS when compared to existing conditions. To evaluate the incremental impact of the program, future conditions in the year 2040 were evaluated with and without the 2014 RTP-SCS.

As indicated in Table 4.12-3, the 2014 RTP-SCS would result in 4,684 fewer daily VMT when compared to 2040 conditions without the 2014 RTP-SCS. As shown in Table 4.12-4, the total CVMT would be less (792) with the 2014 RTP-SCS when compared to 2040 conditions without the plan. As shown in Table 4.12-5, the average trip time would be less (0.02 minutes) with the 2014 RTP-SCS when compared to 2040 conditions without the plan. Transportation/circulation impacts related to performance of the regional transportation system would be Class III, less than significant.

**Table 4.12-3  
 Total Vehicle Miles Traveled**

	2013	2040 without 2014 RTP-SCS	2040 with 2014 RTP-SCS	Net Reduction With 2014 RTP-SCS
<b>Total VMT</b>	2,187,814	2,987,031	2,982,347	4,684

**Table 4.12-4  
 Total Congested Vehicle Miles Traveled**

2013 Total CVMT	2040 Total CVMT without 2014 RTP-SCS	2040 Total CVMT with 2014 RTP-SCS	Net Reduction With 2014 RTP-SCS
90,388	463,125	462,333	792

**Table 4.12-5  
 Average Trip Time Per Person**

2013 (Minutes)	2040 without 2014 RTP-SCS	2040 with 2014 RTP-SCS	Net Reduction With 2014 RTP-SCS
8.74	8.79	8.77	.02

Mitigation Measures. No mitigation measures are required.

Significance After Mitigation. Impacts related to operational metrics would be less than significant without mitigation.

**Impact T-2** The 2014 RTP-SCS would generally be consistent with applicable alternative transportation plans and policies. This is a Class III, less than significant impact.

Transit. As discussed above, KART and CAT have developed transit performance standards. However, a project-level analysis of the potential conflicts with performance standards is not possible at this time. Transit projects included in the 2014 RTP-SCS would be consistent with applicable plans and policies because the transit improvements support the use of alternative modes of transportation. Further, transit authorities in the region were consulted during preparation of the 2014 RTP-SCS. Based on a projected reduction in VMT, CVMT and average trip time, it is inferred that transit related improvements would increase access to and use of transit services. Impacts would be less than significant.

Bicycle and Pedestrian Facilities. The 2014 RTP-SCS contains a number of projects focused on bicycle and/or pedestrian facilities. These projects would improve access and safety related to operation of these facilities. In addition, KCAG consulted with member agencies during preparation of the 2014 RTP-SCS to ensure consistency with local plans. Impacts would be less than significant.



Rail Transportation. As discussed, there are active passenger or freight rail services operating within Kings County. However, the 2014 RTP-SCS does not contain projects that address passenger or freight rail transportation. No impact would occur.

Mitigation Measures. No mitigation measures are required.

Significance After Mitigation. Impacts would be less than significant without mitigation.

**c. Induced Travel.** Induced travel is vehicle activity resulting from new trip generation as a response to new highway capacity. In other words, induced travel is new trips or diversion of existing trips to new, farther, destinations generated in response to increased highway capacity. Trips that are generated by socioeconomic growth and trips that do not result in a net increase in trips (e.g., trips that are diverted from one roadway to another as a result of roadway improvements) are not induced travel.

The theory behind induced travel and increased travel demand is that increased highway capacity (i.e., a new or widened roadway) reduces the “cost” of travel (i.e., travel time), thereby increasing the demand for travel. Induced travel, however, is only one potential component of increased travel demand. Schiffer, Steinvorth, & Milam (2004) notes that travelers may respond to reduced travel time in several different ways: route diversion, mode change, destination change, schedule change, trip consolidation, and possibly new trips.

The relationship between increases in highway capacity and traffic is very complex, involving various travel behavior responses, residential and business location decisions, and changes in regional population and economic growth.” Schiffer et al. (2003, p. 5) reach similar conclusions from their literature review: “[t]he statistical relationship between road supply and traffic is not the result of a simple, one-way, causal link” and it is “[d]ifficult to disentangle the many contributors to increased travel.”

As Parthasarathi et al. (2003, p. 1335) state, “considerable controversy has existed over the existence and importance of the response of demand to supply.” Schiffer et al. (2003, p. 4) conclude that “the research of induced travel is still evolving and that researchers are just beginning to unravel the complex relationships between investments in roadway capacity and the resulting travel demand effects.” Induced travel may occur, but “[t]o what degree and under what circumstances these increases occur is a matter of debate” (Schiffer et al., 2003, p. 4).

In *Generated Traffic and Induced Travel: Implications for Transport Planning*, Litman (2009, Abstract) argues that adding capacity to a roadway increases “generated traffic,” which “fills a significant portion of capacity added to [a] congested urban road.” Litman, however, defines “generated traffic” as “diverted traffic (trips shifted in time, route and destination), and induced vehicle travel (shifts from other modes, longer trips and new vehicle trips)” (Abstract). Similarly, although Noland (2001, Abstract) finds “that added lane mileage can induce significant additional travel,” his definition of induced travel includes “mode shifts, route shifts, redistribution of trips, generation of new trips, and long run land use changes that create new trips and longer trips.”

When the types of travel demand are clearly differentiated, most studies conclude that trips related to socioeconomic growth and trips diverted from other facilities account for the majority of increased travel demand experienced along major highways. *Effects of Increased Highway Capacity on Travel Behavior* (CARB by Dowling and Associates, 1995) and *Expanding Metropolitan Highways, Implications for Air Quality and Energy* (Transportation Research Board Report 245) conclude that if new highway capacity does fill up, it is due *not to* induced travel, but rather to travelers diverting from other facilities or time periods in the short term, and to socioeconomic growth in the long term.

Other literature confirms the prominence of diverted trips in the short-term. The Atlanta Regional Commission (2006), in *ARC Analysis of Induced Travel Effects and VMT Diversion*, explains that the change in VMT compared to the change in lane-miles “inherently contains several different changes in travel demand. Probably the most important is the change of path, whereas a trip which used to use an arterial now is re-routed to the freeway” (p. 5). *The South Coast Highway 101 Deficiency Plan* generalizes the findings from *Effects of Increased Highway Capacity on Travel Behavior* (CARB by Dowling and Associates, 1995) and *Expanding Metropolitan Highways, Implications for Air Quality and Energy* (Transportation Research Board Report 245) as follows: “Most of the increase in peak period traffic observed (90+ percent) when capacity of a congested highway is increased is the result of shifts in traffic from other routes or time periods rather than new increases in highway system use.” The FHWA (2007) states: “While some of these [traveler] responses [to increased highway capacity] do represent new trips, much of the observed increase in traffic comes from trips that were already being made before the increase in highway capacity, or reflect predictable traveler behavior that is accounted for in travel demand forecasts.”

Another complication in drawing conclusions from the literature is that many studies have not differentiated between the impacts of new roads versus widened roads and roads in urban/developed areas versus roads in rural/undeveloped areas. Schiffer et al. (2003) found in their literature review that “[i]nduced travel effects for constructing new roadways versus widening existing roadways were not definitive” and “[u]rban versus rural differences in induced travel are unknown” (p. 5). Those who have specifically studied the differentiations have confirmed that they are important. The results of a study by Parthasarathi, Levinson, & Karamalapati (2003) “indicate that larger stable jurisdictions do not produce a change in VKT [vehicle kilometers traveled], while growing MCDs [Minor Civil Divisions] do” (p. 1345). The same study highlights “the importance of separating new construction from the expansion of existing links” (Summary). The authors found that most previous studies had not made the differentiation between new roads and widened roads, and, not surprisingly, their results showed that any impacts from widening would likely be less than any impacts from new roads.

Major transportation projects in the 2014 RTP-SCS emphasize the widening of an existing roadway rather than the construction of new roadways. Therefore, it is likely that any potential induced travel impacts from the RTP-SCS would not be as great as the studies cited above would suggest.

The complexities of the topic of induced travel have led to a variety of conclusions in the literature. “Depending upon methodologies and data sources, analyses of induced travel



provide differing results” (Strathman et al., 2000, p. 5). The wide variety of values calculated for the elasticity of travel demand highlights this problem.

The FHWA (2007) defines demand elasticity as “the percentage change in the quantity demanded for a good, divided by the associated percentage change in the price of the good.” In the case of travel, the “demand” is usually VMT and the “price” (or “supply”) is usually lane-miles. There are several ways to calculate elasticities; the most commonly used equation is:

$$\text{Elasticity} = \frac{\Delta \text{VMT}}{\Delta \text{Lane Miles}}$$

An elasticity of 0.0 means that any increase in lane-miles does not cause any increase in VMT, while an elasticity of 1.0 means that every percentage increase in lane-miles causes an equal percentage increase in VMT. Schiffer et al. (2003, p. 5) found that “As measured by the increase in VMT with respect to an increase in lane-miles, short-term effects have an elasticity range from near zero to about 0.40, while long-term elasticities range from about 0.50 to 1.00.” Similarly, Noland (2001, Abstract) found elasticities “of about 0.3–0.6 in the short run and between 0.7 and 1.0 in the long run.” The ARC (2006) found the elasticity for increasing freeway capacity to be approximately 0.40.

The FHWA (2007) further advises that “extreme caution should be used when interpreting the results of these studies to make inferences about the magnitude of induced travel. ...despite the large number of empirical studies involving travel demand elasticities, there is very little agreement among researchers or transportation planning professionals on acceptable values of demand elasticities to use in estimating induced travel. ...indiscriminate application of demand elasticities can significantly over-estimate induced travel impacts.”

Conclusion. Travel demand in Kings County may increase in the future, but data indicates demand will be driven primarily by socioeconomic growth. If any induced travel does occur, it will likely be insignificant. Based on the improvements in the 2014 RTP-SCS, it is speculative to quantify induced increases in travel demand. However, based on the preceding analysis, significant impacts on infrastructure, services or congestion relating to induced travel are not anticipated.

**d. Specific 2014 RTP-SCS Projects That May Result in Impacts.** The analysis within this section discusses the potential transportation and circulation related impacts associated with the ~~transportation improvement projects and the land use scenario envisioned by the~~ 2014 RTP-SCS. The projects that comprise the program are evaluated herein in their entirety and all are intended to improve traffic circulation rather than cause adverse impacts. No specific projects that are likely to have an adverse impact on traffic/transportation system would be implemented; thus, none are specified within this section.



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## 4.13 LESS THAN SIGNIFICANT ENVIRONMENTAL FACTORS

Section 15128 of the California Environmental Quality Act (CEQA) Guidelines requires an EIR to briefly describe any possible significant effects that were determined not to be significant. The environmental factors discussed below represent the remainder of checklist questions as listed in Appendix G of the CEQA Guidelines that were not discussed in the other impact sections of the EIR including in the Initial Study (see Appendix A).

### 4.13.1 Biological Resources

The 2014 RTP-SCS would not conflict with an adopted Habitat Conservation Plan, Natural Community Conservation Plan (HCP/NCCP), or other approved local, regional, or state habitat conservation plan, as there are no adopted habitat or natural community conservation plans in the region (see Section 4.3, Biological Resources) that cover activities proposed by the 2014 RTP-SCS. The Kern Water Bank Authority (KWBA) HCP/NCCP Master Permit Area includes the Kettleman Hills area of Kings County. However, in order to promote the use of KWBA's conservation bank by third party projects outside of Kern County, it does not apply to activities within Kings County. In addition, the Pacific Gas and Electric (PG&E) San Joaquin Valley Operations and Maintenance Habitat Conservation Plan (HCP) area includes the Kings County region, however the HCP does not cover activities included in the 2014 RTP-SCS. Upon implementation, on a project by project basis, KCAG and sponsor agencies shall ensure compliance with any adopted HCPs within the County. Thus, the 2014 RTP-SCS would not conflict with an adopted HCP/NCCP. Therefore, impacts would be less than significant.

### 4.13.2 Geology and Soils

The 2014 RTP-SCS does not include projects that would require the use of septic tanks or alternative waste water disposal systems. ~~Future compact development is anticipated to connect to existing wastewater infrastructure.~~ Therefore, impacts related to soils incapable of adequately supporting the use of septic tanks would be less than significant.

As an inland region separated from the Pacific Ocean by mountains, the Kings County region is at no risk from tsunamis. Earthquake-induced seiches also do not pose a risk to the region ~~Kings County~~. Therefore, impacts related to tsunamis and seiche would be less than significant.

### 4.13.3 Hazards and Hazardous Materials

Transportation improvement projects under the 2014 RTP-SCS could facilitate the transport of hazardous materials on roadways or railways in the Kings County region 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) and the state Hazardous Waste Control Act and California Vehicle Code, would ensure that the transport of hazardous materials, the handling of acute hazardous substances within proximity to schools, and the release of hazardous materials would be adequately controlled such that impacts would be less than significant. 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 occur on known hazardous





sites. ~~With regard to future projects that would develop new facilities, because of the programmatic nature of the project, it is not possible to determine with accuracy whether future projects located on previously undisturbed land would contain hazardous materials. However, such projects would be required to address any on-site environmental issues, including any potential hazardous materials and mitigate such impacts accordingly. Impacts would be less than significant.~~

Some projects under the 2014 RTP-SCS may be located within an airport safety zone; however, the 2014 RTP-SCS would not directly expose people or create a new airport safety hazard. The 2014 RTP-SCS would not expose people to new wildland fire hazards, ~~as future development projects would occur in existing urbanized areas, not adjacent to wildlands.~~ Finally, the 2014 RTP-SCS would have no adverse impact on adopted emergency response plans or emergency evacuation plan; rather, by improving circulation in the County region, it could have beneficial impact on emergency response and evacuation. Impacts would be less than significant.

#### 4.13.4 Hydrology and Water Resources

The 2014 RTP-SCS would not change the drainage pattern of an area or result in flooding due to the alteration of a stream or river, as the 2014 RTP-SCS does not propose such actions. The majority of projects would occur within existing rights-of-way and would not generate significant new surface water runoff that could exceed the capacity of stormwater infrastructure. Impacts would be less than significant.

#### 4.13.5 Land Use

As described above under 4.13.1, the 2014 RTP-SCS would not conflict with an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan, ~~as there are no adopted habitat or natural community conservation plans in the region (see Section 4.3, Biological Resources) that cover activities proposed by the 2014 RTP-SCS.~~ Therefore, impacts would be less than significant.

#### 4.13.6 Mineral Resources

The 2014 RTP-SCS primarily involves modifications to existing roadways, including improvements related to intersections, safety, and widening, as well as alternative transportation projects. ~~In addition, future development would be located within existing urbanized areas.~~ These projects would not affect known mineral resources or locally important mineral resources.

#### 4.13.7 Noise

Any ~~future~~ project under the 2014 RTP-SCS located within an airport land use plan zone and/or applicable noise contour would be subject to the policies of the Airport Land Use Commission pertaining to noise exposure, which would ensure that noise attenuation features are implemented into the project as necessary. Impacts would be less than significant.

#### 4.13.8 Population and Housing

Improvements associated with the 2014 RTP-SCS would not necessarily result in direct population growth beyond anticipated growth in the region. Rather, they are designed to fully support the transportation needs of the growing population while implementing the compact development approach outlined in the SCS. The SCS is designed to accommodate growth by encouraging compact development in already urbanized areas. The 2014 RTP-SCS transportation improvement projects are intended and designed to support the land use patterns established in the SCS. Therefore, the 2014 RTP-SCS is consistent with projected and planned growth. Further, all transportation improvement projects and land uses envisioned by the RTP-SCS are anticipated by the general plans of the applicable local jurisdictions, as all improvements have been coordinated with the applicable local jurisdiction. Therefore, population growth impacts would be less than significant.

#### 4.13.9 Public Services

Transportation projects under the 2014 RTP-SCS would not generate demand for police or fire services, schools, parks, or other public facilities. Future projects may increase demand on public services such as fire and police protection, schools, parks, or other public facilities. However, this demand would not exceed that already anticipated by the respective areas in which these projects would be located. This is primarily because the 2014 RTP-SCS would not result in new population growth; rather it would redistribute future populations to existing urban cores. In addition, local member agencies would address any public service demand issues as development is proposed, which may require the reallocation of resources and/or augmentation of service areas. It should be noted that compact development as envisioned in the SCS may have a beneficial impact to police and fire protection services because the travel distance would be shorter thereby improving emergency response times. Impacts would be less than significant.

#### 4.13.10 Recreation

Transportation projects under the 2014 RTP-SCS would not generate demand for park land. Future projects may increase demand on park land. However, this demand would not exceed that already anticipated by the respective areas in which these projects would be located. This is primarily because the 2014 RTP-SCS would not result in new population growth; rather it would redistribute future populations to existing urban cores. In addition, local member agencies would address any park land demand issues as development is proposed. Impacts would be less than significant.

#### 4.13.11 Transportation and Circulation

The 2014 RTP-SCS would improve the overall efficiency of the transit system. The 2014 RTP-SCS would not impact air traffic patterns, create a traffic hazard due to a design feature or result in inadequate emergency access. Impacts would be less than significant.

#### 4.13.12 Utilities and Service Systems

The 2014 RTP-SCS transportation improvements would not exceed wastewater treatment requirements, require construction or expansion of wastewater treatment facilities, require a



determination by a wastewater treatment provider, or conflict with regulations pertaining to solid waste. Construction activities may generate temporary quantities of solid waste that would need to be disposed of at local landfills. However, impacts would be temporary in nature and reduced by compliance with the California Green Building Code, which requires that construction operations recycle a minimum of 50% of waste generated. ~~Future development projects may need to connect to existing sewer services, which may increase demand for wastewater treatment. In addition, sewer connections may need to be upgraded and resized to accommodate additional flow. The necessary improvements would be determined by local member agencies at the time such projects are proposed. Improvements would generally occur within existing utility easements and would not create new environmental impacts. Similarly, such projects would generate solid waste, which may require landfill capacity. However, this demand would not exceed that already anticipated by the respective areas in which these projects would be located. This is primarily because the 2014 RTP-SCS would not result in new population growth; rather it would redistribute future populations to existing urban cores. Impacts would be less than significant.~~

## 5.0 LONG-TERM EFFECTS

### 5.1 GROWTH-INDUCING IMPACTS

Section 15126.2(g) of the *State CEQA Guidelines* requires a discussion of a proposed project's potential to induce growth. Specifically, an EIR must discuss the ways in which the proposed project could foster economic or population growth. Included in this are projects which would remove obstacles to population growth. In addition, the EIR must discuss how the project may encourage and/or facilitate other activities that could significantly affect the environment. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment. Economic and population growth does not necessarily create significant physical changes to the environment. However, depending upon the type, magnitude, and location of growth, it can result in significant environmental effects. A project's growth inducing potential is therefore considered significant if growth generated by the project could result in significant effects in one or more environmental issue areas.

#### 5.1.1 Economic Growth

Implementation of the 2014 RTP-SCS would create short-term economic growth in the Kings County region as a result of construction-related job opportunities. The 2014 RTP-SCS implementation would also generate additional employment opportunities for roadway, vehicle, and landscape maintenance, and transportation facility clean-up. The potential employment increase may subsequently increase the demand for support services and utilities, which could generate secondary employment opportunities. This additional economic growth would likely raise the existing revenue base within the region. Although such growth may incrementally increase economic activity in the county, significant physical effects are not expected to result from economic growth generated by the 2014 RTP-SCS.

#### 5.1.2 Removal of an Impediment to Growth

The majority of 2014 RTP-SCS transportation improvements will take place in existing urbanized areas such as the cities of Avenal, Corcoran, Hanford, and Lemoore. The remaining bulk of transportation improvements will take place throughout the unincorporated area and communities of Kings County. Such transportation improvements can be perceived as removing an obstacle to growth by either creating additional traffic capacity (in the case of widenings) or improving access to undeveloped areas (in the case of road extensions). New infrastructure may also serve to accelerate or shift planned growth or encourage and intensify unplanned growth.

However, these improvements would not necessarily removal any obstacles to growth. Rather, they are designed to fully support the transportation needs of the growing population while implementing the compact development approach outlined in the SCS. The SCS is designed to accommodate growth by encouraging compact development in already urbanized areas. The 2014 RTP-SCS transportation improvement projects are intended and designed to support the land use patterns established in the SCS. Therefore, the 2014 RTP-SCS is consistent with projected and planned growth. Further, all transportation improvement projects and land uses



envisioned by the RTP-SCS are anticipated by the general plans of the applicable local jurisdictions, as all improvements have been coordinated with the applicable local jurisdiction.

## 5.2 IRREVERSIBLE EFFECTS

Section 15126.2(c) of the CEQA Guidelines requires a discussion of significant irreversible environmental changes that would occur as a result of a proposed project.

The 2014 RTP-SCS update is anticipated to cover a 26-year period from 2014 to 2040. The proposed improvements would be located primarily in areas where transportation facilities already exist, or where transportation facilities are already planned. ~~or where transportation facilities are needed to support the new land use patterns identified in the Sustainable Communities Strategy.~~ Therefore, most proposed transportation projects are not generally expected to dramatically alter development patterns in the county and projects would support planned future development patterns. The 2014 RTP-SCS would provide a foundation for local, regional, and state officials in making decisions aimed at achieving a coordinated and balanced transportation system.

In the absence of the programmed and planned capital improvements under the 2014 RTP-SCS, traffic conditions throughout the county would continue to worsen as the county's population grows, see Section 4.12 *Transportation and Circulation*. The increasing traffic may also worsen safety problems on some county roads. However, implementation of the project would involve certain tradeoffs as it would create impacts in other issue areas that would not occur without the planned improvements.

Many of the potential adverse impacts that could occur from implementation of the 2014 RTP-SCS are short-term in nature, resulting primarily from construction of the proposed transportation projects. Typical construction-related impacts can involve the following issues: noise, air quality, aesthetics, and risk of upset related to hazardous materials. In addition, though such materials would not be used in a wasteful manner, all construction activity would involve the use of non-renewable energy sources and building materials, see Section 4.5 *Energy*.

Long-term environmental impacts are associated with increased paving, and the related loss of agricultural soils, biological impacts, and cultural resources (historic resources), as discussed in their respective sections of this EIR. ~~In addition, the 2014 RTP-SCS would result in an overall increase in the urbanized character of the region.~~ Mitigation measures have been prescribed to minimize these impacts. However, impacts in certain instances (aesthetics, cultural resources, ~~and biological resources, and land use (conversion of agricultural lands)~~) would remain significant.

## 6.0 ALTERNATIVES

As required by Section 15126(d) of the *State CEQA Guidelines*, this EIR examines a reasonable range of alternatives to the proposed project that could feasibly achieve similar objectives. A primary objective is to achieve a coordinated and balanced regional transportation system while reducing greenhouse gas (GHG) emissions from passenger vehicles and light trucks to meet the regional GHG reduction targets set by the California Air Resources Board (ARB). The analysis of alternatives focuses on the various ~~land use and~~ transportation scenarios that incorporate different assumptions regarding the ~~combinations of future land uses and~~ transportation system improvements. An alternative location for the Plan as a whole is not possible. However, within Kings County, the 2014 RTP-SCS considers different patterns of ~~land use and~~ transportation investments to accommodate future growth and regional housing needs.

The alternative ~~land use and~~ transportation scenarios modeled and analyzed by KCAG are described in Chapter 12, Sustainable Communities Strategy, of the 2014 RTP-SCS. Scenarios were based on policies and goals adopted by the KCAG Board of Directors. Performance measures were then developed to measure the effectiveness of any given scenario in meeting the goals and objectives for the region. Performance measures used to evaluate alternative scenarios include, among others, consumption of important farmland; environmental and economic opportunity and equity in access; reduced emissions; improved public health via mode choices and access to a healthy environment; transportation system preservation; and economic development including a job/housing balance and reduction in travel time to jobs. Scenarios also were selected based on their ability to meet GHG reduction targets required by SB 375. The GHG performance measure was calculated using KCAG's land use model and recently updated regional travel demand model, as well as the EMFAC 2011 emission factor model. This alternatives analysis includes the following alternatives to the proposed 2014 RTP-SCS:

**Alternative 1: 2040 No-Build Scenario (No Project):** The No-Build Scenario assumes there will be no new future transportation projects through the year 2040. This alternative is based on 2040 population projections and rather than focusing on coordinating transportation projects that meet ~~land use and~~ transportation scenario recommendations in the 2014 RTP-SCS, there would be no future transportation projects beyond existing conditions.

**Alternative 2: Intensified Transit with 30% Investment:** In addition to the 2014 RTP-SCS projects listed in Table 2-1 and an investment in transit projects of 10-15%, this alternative increases the investment in transit projects to 30%. Transit investments would nearly double under this alternative, increasing opportunities for alternative modes of transportation with improvements such as: improved bus service with more bus stops and more frequent bus service, an increase in the number of bicycle and pedestrian facilities, and improved connectivity of neighborhoods to services and facilities.

**Alternative 3: Business As Usual:** The Business As Usual alternative assumes the continuation of regional growth trends based on 2013 baseline conditions. Existing land use development patterns would continue into the future with future development projects for low-density residential development and auto-oriented travel, and transportation projects that are currently funded.



Each alternative is described and analyzed below to determine whether environmental impacts would be similar to, less than, or greater than those of the 2014 RTP-SCS. As required by CEQA, this section also includes a discussion of the “environmentally superior alternative” among those studied.

The State CEQA Guidelines require that an EIR identify any alternatives that were considered but rejected as infeasible during the scoping process and a brief explanation justifying the determination. During the development of the 2014 RTP-SCS, KCAG received extensive public comment and participation in developing the alternatives analyzed in this Draft EIR. During this process, all comments and recommendations for transportation improvements were considered and integrated into the alternatives developed and discussed herein.

## 6.1 ALTERNATIVE 1: 2040 NO-BUILD SCENARIO (NO PROJECT)

### 6.1.1 Description

The 2040 No-Build Scenario is defined as a land use pattern comprised of existing land use trends and no additional transportation projects beyond currently fully-funded short-term projects. The alternative is based on 2040 population projections and rather than focusing on coordinating transportation projects that meet ~~land use and transportation scenario recommendations in the 2014 RTP-SCS that serve compact development~~, the transportation network would not be improved or expanded with new transportation projects.

Specifically, it would result in greater impacts related to air quality, greenhouse gas emissions, noise, and traffic, as the population would grow. ~~There would be an increased amount of agricultural land converted due to the less compact development pattern relative to that envisioned under the land use and transportation scenarios in the 2014 RTP-SCS.~~

-Alternative 1 would result in higher VMT as fewer trips by transit, bicycle or walking would occur, and improvements to overall transportation system efficiency associated with implementation of the 2014 RTP-SCS transportation projects would not occur. Congested Vehicle Miles Traveled (CVMT) would also be higher, which indicates greater congestion on existing roadways, because projects intended to alleviate congested conditions and/or reduce travel demand would not be constructed. Further, because ~~overall population densities would not increase and~~ fewer transit projects would be developed, there would be fewer households living within ½ mile of a high quality transit stop than under the proposed project.

### 6.1.2 Impact Analysis

**a. Aesthetics.** Implementation of this alternative would result in fewer visual impacts as compared to the proposed project, because many of the proposed interchanges, bridges, and roadway extensions, as well as transit facilities would not be constructed. ~~Nevertheless, land use development would continue to occur, and the gradual transformation toward a more urban/suburban character would occur in many parts of Kings County.~~ Therefore, overall aesthetic impacts associated with implementation of this alternative may be less than the proposed project, but would result in similar types of impacts and require all mitigation measures discussed in Section 4.1, *Aesthetics*.

**b. Air Quality.** Implementation of this alternative would result in less construction related air quality impacts, as fewer projects would be built; however, VMT under this alternative would be greater than for the proposed plan, ~~as focus would not be placed on infill in urban centers and increased connectivity of housing to commercial and community facilities.~~ Therefore, operational emissions for PM<sub>2.5</sub>, PM<sub>10</sub>, ROG and NO<sub>x</sub> would be greater for this alternative when compared to the proposed RTP-SCS, as shown in Table 4.2-6 in Section 4.3, *Air Quality*. ~~The RTP-SCS is intended to increase residential and commercial land use capacity within existing transit/transportation corridors which would shift a greater share of future growth to these corridors, ultimately increasing density, improving circulation and multimodal connections.~~ The RTP-SCS would ~~therefore~~ improve the overall efficiency of the transportation network. Thus, overall air quality impacts would be greater under this alternative when compared to the RTP-SCS. All mitigation measures identified in Section 4.2, *Air Quality* would still be required to reduce or avoid potentially significant impacts.

**c. Biological Resources.** Implementation of this alternative would result in less impact to biological resources as fewer overall projects, including roadway extensions, widening projects and creek crossings would occur under this alternative. This would result in less ground disturbance and fewer impacts to special status plants, animals, wetlands and/or riparian habitat outside developed urban areas than anticipated if the RTP-SCS were implemented. Impacts related to wildlife movement may also be reduced, as fewer transportation less development projects would occur. While impacts to sensitive plant and animal species and wetlands may be reduced under this alternative, impacts would remain significant and unavoidable, and all related mitigation measures referenced in Section 4.3, *Biological Resources* would apply.

**d. Cultural Resources.** Implementation of this alternative would involve less ground disturbance than would occur under the RTP-SCS; and therefore, would reduce the potential to impact unknown cultural resources. However, some ground disturbance would still occur and impacts related to unknown cultural resources would remain significant but mitigable (Class II) and all related mitigation measures referenced in Section 4.4, *Cultural Resources*, would apply. Because this alternative would include less fewer transportation compact development projects than the RTP-SCS, potential impacts to historic structures ~~from infill projects~~ may be reduced, but could also be significant and unavoidable. As discussed in Section 4.4, *Cultural Resources*, projects would require independent review at which time the significance of the impact would be precisely determined. ~~The expansion of urban areas into undeveloped land that may occur under this alternative could result in potential impacts to cultural resources and these impacts may be greater than what would occur if development were concentrated in already disturbed urban areas, as proposed by the RTP-SCS.~~ Overall, impacts related to cultural resources would be similar or greater reduced under this alternative than what could occur as a result of the RTP-SCS.

**e. Energy.** Because future construction would be reduced under this alternative, energy use associated with construction activities is expected to be less than under the proposed project. However, this alternative would not include many of the capital improvements envisioned under the proposed RTP-SCS that would improve transportation efficiency and reduce regional energy demand. As shown in Table 4.5-4, Section 4.5, *Energy*, the 2040 No



Project scenario would increase energy consumption by 0.7 percent as compared to the RTP-SCS scenario for the 2040 analysis year.

For the purposes of this discussion, one alternative would have a greater energy impact than another if it involved inefficient, wasteful, and unnecessary consumption of energy. The RTP-SCS includes projects intended to improve the efficiency and effectiveness of the transportation system. Further, the transportation improvements proposed under the RTP-SCS would result in a more efficient transit system, greater availability of public transit and other alternative modes of transportation, ~~as well as a more energy efficient land use scenario~~ than the 2040 No Project alternative. The reduction in overall VMT resulting from these improvements would reduce fuel consumption and promote fuel efficiency. Thus, in comparison to the RTP-SCS, the 2040 No Project Alternative would result in less efficient use of energy resources across Kings County; and therefore, would have a greater impact to energy resources than the proposed project.

**f. Environmental Justice.** Because this alternative would not include many of the capital improvements defined within the RTP-SCS, it would likely result in fewer direct impacts to minority and/or low income populations relative to air quality, noise and traffic. Like the proposed project, these impacts would remain less than significant. However, this alternative would not involve the implementation of transportation projects ~~supporting compact development patterns~~ that would improve mobility for low income and minority populations and communities of concerns. The proposed project would provide greater access to transportation services for low income and/or minority populations than the No-Build Alternative. Therefore, environmental justice impacts with respect to mobility benefits would be greater under the No-Build alternative than the RTP-SCS.

**g. Geology and Soils.** Because this alternative does not include as many new projects, there would be less exposure of new structures to hazardous conditions, including liquefaction, expansive soils, landslides, ground-shaking, and flooding. Conversely, if inadequate structures are not replaced, the potential for these existing structures and people using these structures to be damaged or injured by geologic hazards could be greater than under the proposed RTP-SCS. Therefore, the overall impact of this alternative would be similar to that expected under the proposed project and impacts would remain significant but mitigable. All related mitigation measures referenced in Section 4.7, *Geology*, would be required.

**h. Greenhouse Gases Emissions/Climate Change.** Implementation of this alternative would result in fewer impacts associated with GHG emissions during construction activities as fewer projects would be constructed than under the proposed 2014 RTP-SCS. However, this alternative would not ~~include the SCS component of the RTP; and, therefore, would not~~ reduce GHG emissions as required by SB 375. As shown in Table 4.8-2, of Section 4.8, *Greenhouse Gas Emissions/Climate Change*, GHG emissions under the 2040 No-Build Scenario would be higher when compared to GHG emissions with the RTP-SCS. This is primarily a result of the transportation efficiency benefits associated with the RTP-SCS that wouldn't occur under the No Project Alternative. As long-term GHG emissions would be higher under this alternative, the overall impact of this alternative would be greater than what would occur under the RTP-SCS and mitigation measures referenced in Section 4.8, *Greenhouse Gas Emissions/Climate Change*, would be required.



**i. Hydrology and Water Resources.** Because the amount of future construction activity would be reduced under this alternative, the amount of water needed for dust suppression activities and the potential for water quality impacts resulting from erosion would be reduced as would the amount of new landscaped areas requiring irrigation. Further, under this alternative, the increase in impermeable, paved surfaces would likely be less than anticipated under the RTP-SCS. Overall, incremental increases in water quality and supply impacts, as well as incremental reductions in groundwater recharge, would be less than the proposed RTP-SCS but would still occur. This alternative would also have fewer projects that could be subject to flooding. Nevertheless, impacts would remain significant but mitigable and all related mitigation measures referenced in Section 4.9, *Hydrology and Water Resources*, would be required.

**j. Land Use.** ~~The development pattern would be less compact~~ There would be fewer transportation projects under this alternative than the proposed RTP-SCS. Consequently, anticipated land use conflicts related to air quality, light and glare and noise may be less under the 2040 No Build scenario alternative when compared to ~~a more concentrated development pattern anticipated under the proposed project~~. Similar to the RTP-SCS, it is likely that impacts would be significant but mitigable, as some development would still occur, and Mitigation Measure LU-2 would apply.

Implementation of the proposed RTP-SCS would result in the conversion of agricultural lands including Prime Farmland and lands under Williamson Act contract to non-agricultural uses. This is a Class I, significant and unavoidable impact that for transportation projects would be reduced under this alternative. ~~However, because this alternative would result in less compact development patterns, more agricultural lands would be converted under this alternative.~~ Thus the impact would ~~greater less~~ than the proposed project ~~and but~~ the impact would remain significant and unavoidable.

Because fewer projects would be implemented, temporary disruptions to residents and businesses associated with temporary road or lane closures or impacts to parking access would be less. Related land use impacts would occur to a certain extent and remain significant but mitigable (Class II) under the No Build scenario alternative. Related mitigation measures referenced in Section 4.10, *Land Use* would apply.

**k. Noise.** Because noise is a site specific issue, noise studies would be prepared for each project to determine whether impacts would occur. From a program perspective, fewer projects would result in less construction activity. This would reduce temporary noise impacts throughout Kings County. However, construction noise would still occur and impacts may be significant but mitigable. All related mitigation measures specified in Section 4.11, *Noise*, would be required.

Although the number of transportation projects would be reduced as compared to the proposed project, an increase in traffic volumes resulting from regional growth would likely occur. Whether noise impacts would be greater or less remains dependent on project specific studies. Regionally, the difference in VMT between the 2040 No Build scenario alternative and the RTP-SCS is not likely enough to noticeably change noise levels. Because transit improvements that are currently funded under the RTP-SCS may occur in order to achieve the objectives of the

RTP-SCS would not be implemented in this alternative, the potential for increased transit noise, while site specific, overall would be less than the RTP-SCS. Overall, noise impacts would be similar to or less than the proposed project.

**1. Transportation and Circulation.** This alternative would not include many of the projects that have been funded or may be funded in the future under the proposed plan, including new highway and intersection projects, new bikeway and pedestrian projects (active transportation), new transit projects, and new intelligent transportation system projects. Many of these projects are intended to reduce automobile trips and address traffic congestion, and in many cases would serve as mitigation measures to reduce potential impacts associated with planned long-term development.

Overall, VMT within the region would increase as a result of regional population growth. As discussed in Section 4.12, *Transportation and Circulation*, and shown in Tables 4.12-3 and 4.12-4, overall VMT would be greater under the 2040 No Build scenario alternative compared to the proposed project, as would CVMT. This would be the result of capacity increases planned as part of the RTP-SCS ~~as well as compact development patterns that would reduce demand for vehicle trips. Capacity increasing projects are intended to reduce congestion on major arterials and highways, while compact development results in shorter travel distances and better access to transit services and other alternative modes of transportation.~~ Without capacity increasing projects VMT would still increase, but roads would be more congested resulting in higher CVMT.

Under the No Build alternative, fewer transit projects would be implemented which would result in greater impact to populations dependent on transit services. Higher CVMT may impact the provision of efficient transit services. As a result, impacts to public transit would be greater under this alternative when compared to the proposed project. Thus, overall, impacts to transportation and circulation would be greater under the No Build scenario alternative than the proposed project.

## **6.2 ALTERNATIVE 2: INTENSIFIED TRANSIT WITH 30% INVESTMENT**

### **6.2.1 Description**

Alternative 2 includes all of the ~~land use and~~ transportation scenario recommendations of the RTP Stakeholder Working Group and reflected in the 2014 RTP-SCS projects list shown in Table 2-1 of the 2014 RTP Sustainable Community Strategy. These projects focus on the following improvements: highway, local roadway, active transportation (bicycle and pedestrian), and transit. In addition to the 2014 RTP-SCS Projects shown in Table 2-1, Alternative 2 includes an additional 30% investment in transit projects. The additional 30% investment in transit projects would include projects that increase bus services, both the number of bus stops and frequency of stops, an increase in the number of bicycle and pedestrian facilities, and would increase neighborhood connectivity to services and facilities.

Alternative 2 is based on 2040 population projections. These projections were based on a land use forecast based on designations from existing local agency general plans and linear trends in



growth on a sub-regional basis. The projected pattern of development would generally be consistent with the land use and transportation recommendations provided by the RTP Stakeholder Working Group. However, Alternative 2 would include additional ~~infill, mixed-use, and transit-oriented~~ projects to maximize the increase in transit investments proposed in this alternative. Further, land use in existing urbanized areas would occur at the higher range of allowed densities (consistent with and according to allowed density in each local agency's General Plan land use and zoning designations). Overall, compared to the 2014 RTP-SCS, this Alternative reduces Total VMT, which results in a decrease in energy use, GHG emissions, and air contaminant emissions.

**a. Aesthetics.** This alternative would result in ~~more compact development patterns than the proposed 2014 RTP-SCS, as it emphasizes even more compact development patterns. This would result in fewer visual changes beyond existing urban boundaries, but would have the same significant and unavoidable impact relating to the shift from a primarily rural environment to a somewhat more suburban condition. To the extent that higher density projects are developed under this alternative,~~ a change in the character of existing urbanized areas would occur similar to those of the 2014 RTP-SCS. With this alternative, as with the proposed 2014 RTP-SCS, many capital improvements would be constructed, and the gradual transformation toward a more urban/suburban character would continue. Overall, aesthetic impacts under this alternative would be similar to the 2014 RTP-SCS. All mitigation measures discussed in Section 4.1, *Aesthetics* would be required.

**b. Air Quality.** Implementation of this alternative would result in a slight increase in short-term construction-related air quality impacts as compared to the proposed project because, in addition to the 2014 RTP-SCS, there would be additional construction activities related to transportation projects, ~~as well as future land use development that would occur as a result of the increase in transit investments.~~ Temporary air quality impacts from construction activities associated with transportation projects under this alternative would remain significant but mitigable and mitigation measures AQ-1 (a) through AQ-1 (d) in Section 4.2, *Air Quality* would apply. Transportation improvements and higher density development according to the local agencies' allowed land use and zoning designations and land use patterns identified under Alternative 2 would result in greater reductions in vehicle miles traveled when compared to the proposed project. Potential air quality impacts from on-road vehicle emissions would remain less than significant. ~~Localized increases in toxic air emissions, resulting from future development consistent with the 2014 RTP-SCS land use scenario and the additional development expected from additional transit investments under Alternative 2,~~ are expected to result in similar exposures to sensitive receptors. Impacts would continue to be significant and mitigation measure AQ-3(a) would be required. In general, an increase in vehicle miles travelled may contribute to an increase in re-entrained roadway dust potentially increasing airborne PM<sub>10</sub> and PM<sub>2.5</sub> levels. Alternative 2 would result in lower total VMT than the proposed project. As a result, re-entrained dust emissions would be lower under the proposed Alternative when compared to the 2014 RTP-SCS project. Impacts remain less than significant and no mitigation is required. Alternative 2 promotes a greater number of transit projects designed to reduce transportation congestion and VMT and promotes a greater number of transportation control measures (TCMs) identified in the SJVAPCD air quality plans that contribute to continued PM<sub>2.5</sub> and PM<sub>10</sub> improvement. Since the alternative would reduce emissions of ozone precursors to levels below those identified in the applicable air quality

plans, impacts would remain less than significant. Overall, air quality impacts would be similar although slightly less under this alternative when compared to the 2014 RTP-SCS. All mitigation measures identified in Section 4.2, *Air Quality* would be required.

**c. Biological Resources.** ~~This alternative would result in more compact development in areas within and adjacent to the existing communities as compared to the proposed project even though the same number of transportation roadway projects would occur.~~ This alternative may result in less impacts to special status plants and animals, and sensitive habitats, as compared to the 2014 RTP-SCS as development transportation projects would be focused in existing urbanized areas rather than undeveloped or vacant parcels that may contain biological resources. Impacts related to wildlife movement would be similar or slightly less under this alternative, since transportation projects that could potentially impact wildlife movement would be primarily located in already urbanized areas. Nevertheless, impacts to sensitive plant and animal species would be potentially significant but mitigable and potential impacts related to wildlife movement would remain significant and unavoidable; therefore, all related mitigation measures discussed in Section 4.3, *Biological Resources*, would apply.

**d. Cultural Resources.** Like the proposed RTP-SCS, this alternative would result in ground disturbance from ~~growth occurring within existing communities and from expansion in roadways.~~ However, growth would be more compact and transportation projects would be located, to a greater extent than the proposed RTP-SCS, within existing urbanized areas under this alternative rather than ~~growth occurring on undeveloped or vacant parcels outside of urbanized areas that may contain known or unknown cultural resources.~~ However, because ~~development and~~ transportation projects may result in disturbance of archaeological and paleontological resources, potential impacts related to unknown cultural resources would remain significant but mitigable, and all related mitigation measures identified in Section 4.4, *Cultural Resources*, would apply. In regard to historic resources, this alternative would result in more ~~infill development~~ transportation projects in existing urbanized areas than the proposed RTP-SCS and because ~~future infill development~~ these projects could be located near or adjacent to existing historic structures, redevelopment or demolition could result in the permanent loss of historic structures. Thus impacts to historic structures would be slightly greater under this alternative. Potential impacts to historic resources would remain significant and unavoidable. Overall, impacts related to cultural resources would be both better and worse under this alternative when compared to the 2014 RTP-SCS.

**e. Energy.** As discussed in Section 4.5, *Energy*, the proposed RTP-SCS ~~land use scenario emphasizes compact development patterns that would locate both residents and jobs closer to existing and planned transit, thereby encouraging~~ the use of alternative modes of transit (e.g. buses), walking and bicycling. Improvements that would occur under the Intensified Transit Alternative would serve a similar purpose; however, the ~~development pattern would be even more compact~~ more transit related projects would be provided in existing urbanized areas.

This alternative would result in less VMT as compared to the proposed project, as projects that provide alternative modes of transportation would be implemented and these services would be available to a denser population. Energy consumption would likely be less than the proposed plan based on VMT.



**f. Environmental Justice.** This alternative would result in greater or similar impacts to minority or low income populations related to air quality, noise and traffic, as more transportation projects development would be concentrated in population centers. These impacts are expected to remain less than significant. ~~This alternative would result in greater infill and mixed-use development within existing urban areas.~~ Thus, Alternative 2 would improve mobility for minority populations and communities of concern relative to existing conditions, and the overall benefit would be greater than under the RTP-SCS. Therefore, environmental justice impacts would be both better and worse when compared to the proposed project.

**g. Geology and Soils.** This alternative would include the same type of transportation projects as the RTP-SCS; and therefore, would result in similar impacts related to hazardous conditions. Impacts may be focused in developed urban areas as fewer projects would occur in suburban or rural areas. The overall impact of this alternative would be similar to that expected under the proposed project and impacts would remain significant but mitigable. All related mitigation measures included in Section 4.7, *Geology*, would be required.

**h. Greenhouse Gas Emissions/Climate Change.** Construction-related GHG emissions under this alternative would be greater than the proposed project because the number of projects constructed would be greater. During operation, VMT would be less than the proposed project, as a more ~~compact development pattern~~ transit related projects would be encouraged. Because GHG emissions projections are based primarily on overall VMT, GHG emissions are expected to be less under this alternative. All mitigation measures included in Section 4.8, *Greenhouse Gas Emissions/Climate Change*, would be applicable.

**i. Hydrology and Water Resources.** Due to an increased investment in transit ~~and~~, this alternative includes a greater number of overall transportation projects being implemented. The construction and maintenance of RTP-SCS projects under this alternative would increase countywide water demand and to a greater extent. Impacts to countywide water demands would remain significant but mitigable and mitigation measures included in Section 4.9, *Hydrology and Water Resources* would be required. Because the amount of future ground disturbance would be greater under this alternative, water needed for construction dust suppression activities and the potential for water quality impacts resulting from erosion would be greater than the 2014 RTP-SCS and the mitigation measures discussed for the proposed RTP-SCS would be required. Under this alternative, the amount of new landscaped areas requiring irrigation would be similar to the proposed project. Overall, water quality impacts and water supply impacts, as well as impacts to groundwater recharge and flooding would be similar under this alternative when compared to the 2014 RTP-SCS and all related mitigation measures included in Section 4.9, *Hydrology and Water Resources*, would be required.

**j. Land Use.** This alternative would ~~include a more compact development pattern~~ more transit related projects in comparison to the proposed RTP-SCS. As such, anticipated land use conflicts related to air quality, light and glare, and noise may be greater than the proposed project ~~expected with a less concentrated development pattern~~, but would remain less than significant.

Implementation of the proposed RTP-SCS would result in the conversion of agricultural lands including Prime Farmland and lands under Williamson Act contract to non-agricultural uses. This is a Class I, significant and unavoidable impact under the RTP-SCS and would be similar



under the Intensified Transit Alternative because a similar set of transportation projects would be developed.

Because a more compact development pattern transit related projects in existing urbanized areas would be encouraged with this alternative, more temporary disruptions to residents and businesses related to road/lane closures and/or impacts to parking access may occur relative to the proposed project. These impacts would also occur to a certain extent under the proposed project and are potentially significant but mitigable. All related mitigation measures associated with the proposed project as identified in Section 4.10, *Land Use*, would apply. Overall, land use impacts would be similar for this alternative when compared to the proposed RTP-SCS.

**k. Noise.** Because this alternative would include the 2014 RTP-SCS projects in addition to the projects associated with an additional 30% increase in transit investment, construction-related to these transportation improvements and associated development projects would increase temporary noise levels in discrete locations throughout the County. Impacts would remain significant and mitigation measures N-1(a) through N-1(e) would apply. Although an additional 30% increase in transit investment under this alternative would increase mobility options and decrease Total VMT, impacts associated with the implementation of the RTP-SCS would remain significant and mitigation measures N-2(a) and N-2(b) would be required. ~~The land use scenario associated with this alternative, would include a more compact development pattern. Therefore, this alternative could increase impacts to sensitive receptors in areas with unacceptable noise levels. Impacts would continue to be significant but mitigable and Mitigation Measure N-3 would be required.~~ Overall, noise impacts would be greater with this alternative when compared to the proposed RTP-SCS.

**l. Transportation and Circulation.** Alternative 2 would include a similar range of transportation improvement projects as identified for the proposed project, but with additional transit projects. Thus, this alternative would result in less VMT when compared to the proposed project. Nonetheless, both VMT and CVMT would increase when compared to existing (2013) baseline conditions, which is primarily a result of population and employment growth anticipated to occur throughout the County. Based on expected VMT, potential impacts to transportation and circulation would be less under Alternative 2 and those impacts that do occur may be focused in urban and suburban areas rather than rural areas. Impacts under Alternative 2 would be less than those associated with the proposed RTP-SCS.

## 6.3 ALTERNATIVE 3: BUSINESS AS USUAL SCENARIO

### 6.3.1 Description

The Business as Usual Scenario is comprised of a land use pattern that reflects historic land use trends with growth occurring adjacent to existing communities, resulting in the expansion of community boundaries. ~~This alternative would provide limited infill development.~~ ~~Development Growth in the region would be more suburban and auto-oriented with services and employment separated from housing.~~ New development would occur at lower densities, primarily in the form of large-lot single family housing with limited multi-family housing. Development would occur at the lower end of allowed general plan densities. Alternative 3 would provide limited alternative transportation options and continue to expand roadways.



Overall, Alternative 3 performs poorly when compared to the proposed RTP-SCS due to an increase in VMT and CVMT and to decreased access to transit and less beneficial distribution of investments for low-income and minority populations.

### 6.3.2 Impact Analysis

**a. Aesthetics.** Implementation of this alternative would result in similar visual impacts as compared to the proposed project. This alternative would result in ~~less compact development patterns~~ more transportation projects located in areas outside of existing urbanized areas than the proposed RTP-SCS, ~~which emphasizes compact development~~. This would result in greater visual changes beyond existing urban boundaries. With this alternative, as with the proposed RTP-SCS, capital improvements would be constructed, and the gradual transformation toward a more suburban character would continue. Overall, aesthetic impacts under this alternative would be similar, though slightly greater and all mitigation measures discussed in Section 4.1, *Aesthetics* would be required.

**b. Air Quality.** Implementation of this alternative would result in similar short-term construction-related air quality impacts as compared to the proposed project because a similar amount of ~~overall land development~~ and associated construction activity would occur. ~~Since the future land use scenario envisioned by the RTP-SCS would not be implemented with this alternative,~~ Overall VMT/CVMT would be higher as auto-oriented, suburban development occurs, ~~rather than focusing transportation improvements in existing urbanized areas.~~ Therefore, potential air quality impacts under this alternative would be greater when compared to the proposed project. Accordingly, overall toxic air emissions (diesel particulates) would be greater under this alternative, as would emissions of PM<sub>10</sub>, ROG, and NO<sub>x</sub>. Overall, air quality impacts would be greater under this alternative when compared to the RTP-SCS. All mitigation measures identified in Section 4.2, *Air Quality* would be required.

**c. Biological Resources.** This alternative would result in a greater amount of ground disturbance because ~~an increased amount of land development~~ and transportation roadway projects would occur in areas adjacent to or outside of the existing communities. This alternative may result in greater impacts to special status plants and animals, and sensitive habitats, as compared to the RTP-SCS, as more ~~development~~ transportation projects would occur outside of the existing communities. Impacts to sensitive plant and animal species would be potentially significant but mitigable. Impacts related to wildlife movement would remain potentially significant and unavoidable and all related mitigation measures discussed in Section 4.3, *Biological Resources*, would apply.

**d. Cultural Resources.** This alternative would result in an increased amount of ground disturbance from growth occurring adjacent and outward to existing communities and from expansion in roadways to accommodate that growth. Potential impacts related to unknown cultural resources would remain significant but mitigable and all related mitigation measures identified in Section 4.5, *Cultural Resources*, would apply. Since this alternative would include ~~less infill development~~ transportation projects in existing urbanized areas than anticipated under the RTP-SCS, potential impacts to historic structures from ~~such infill~~ projects may be reduced. Overall, impacts related to cultural resources would be both better and worse under this alternative when compared to the RTP-SCS.





**e. Energy.** As discussed in Section 4.5, *Energy*, the proposed RTP-SCS ~~land use scenario emphasizes compact development patterns that would reduce VMT and related energy use. Compact development patterns~~ Transportation improvements would locate people closer to high quality transit, thereby encouraging the use of alternative modes of transit and resulting in fewer CVMT. Alternative 3 would not emphasize ~~compact development~~ transportation improvements within existing urbanized areas; and therefore, would result in longer average vehicle trips and reduced access to alternative transportation. Overall, VMT would be higher than the RTP-SCS. Thus, energy impacts would be greater with this alternative when compared to the proposed project.

**f. Environmental Justice.** This alternative would result in similar impacts to minority or low income populations related to air quality, noise and traffic, and impacts would remain less than significant. This alternative would serve a similar amount of low income/minority communities when compared to the RTP-SCS and the overall benefit would be similar. Therefore, environmental justice impacts as they relate to mobility benefits would be similar to those of the proposed project.

**g. Geology and Soils.** This alternative would include projects that would expand roadways and community boundaries relative to the RTP-SCS. Since ~~development~~ transportation improvements would occur adjacent and outward from existing communities rather than as ~~infill development within existing urbanized areas~~, this could result in an increased likelihood of potential impacts related to hazardous conditions. However, impacts that might be encountered would remain significant and mitigable. All related mitigation measures defined in Section 4.7, *Geology*, would be required.

**h. Greenhouse Gas Emissions/Climate Change.** Construction-related emissions of GHGs with this alternative would be similar as compared to those associated with the RTP-SCS because a similar amount of overall ~~land development~~ construction would be anticipated. Implementation of this alternative would result in a higher VMT when compared to the proposed plan, as more suburban, auto-oriented development patterns would be supported. In addition, CVMT under this alternative would be greater than the proposed project, as fewer transit projects would be implemented and because vehicles operating in congested conditions are less efficient, GHG emissions under this alternative would be higher in comparison to GHG emissions under the proposed project. Because long-term GHG emissions are expected to be higher under this alternative, the overall impact would be greater. All mitigation measures included in Section 4.8, *Greenhouse Gas Emissions/Climate Change* would be applicable

**i. Hydrology and Water Resources.** The amount of future ground disturbance would be similar under this alternative, therefore, water needed for construction dust suppression activities and the potential for water quality impacts resulting from erosion would be similar to the RTP-SCS. Overall, water quality impacts, water supply and flooding impacts, as well as incremental reductions in groundwater recharge that would occur under this alternative would be similar to, though slightly greater, when compared to the RTP-SCS. As such, impacts would remain significant but mitigable and all related mitigation measures included in Section 4.9, *Hydrology and Water Resources*, would be required.

**j. Land Use.** This alternative would result in a more dispersed land development pattern when compared to the proposed RTP-SCS. As such, anticipated land use conflicts related to air



quality, light and glare, and noise would be reduced as the concentration of development would be lower. Impacts would be less than significant.

Implementation of the proposed RTP-SCS would result in the conversion of agricultural lands including Prime Farmland and lands under Williamson Act contract to non-agricultural uses. This is a Class I, significant and unavoidable impact that would be greater under the Business as Usual Alternative. This Alternative would include more transportation projects that are beyond current community borders, and would support a more dispersed development pattern, thereby converting more Prime Farmland and lands under Williamson Act contract to non-agricultural uses.

Under Alternative 3, ~~less compact development~~ fewer transportation improvements within existing urbanized areas would be encouraged; therefore, fewer temporary disruptions to residents and businesses associated with temporary road or lane closures or impacts to parking access would occur. However, ~~development~~ transportation improvements would still be implemented near current residents and businesses and these impacts would remain significant but mitigable. Related mitigation measures identified in Section 4.10, *Land Use*, would apply.

**k. Noise.** Overall construction activities would be similar but noise impacts would be experienced on the edge of existing communities rather than ~~as infill~~ within existing urbanized areas. For noise receptors located near construction sites, noise impacts are expected to be similar to those described for the RTP-SCS. As discussed, development would be suburban and auto-oriented. Noise would be generated by roadway operation and vary depending on traffic volume and speed. The higher VMT anticipated under this alternative would result in more vehicle trips which may increase noise levels over what would be expected to occur with the proposed project. Impacts would be significant but mitigable and all related mitigation measures identified in Section 4.11, *Noise*, would be required.

**l. Transportation and Circulation.** Alternative 3 would involve a similar range of transportation improvement projects as compared to the RTP-SCS, but would result in a more dispersed development pattern that would result in an increase in VMT when compared to the proposed plan. Congested VMT would be greater for Alternative 3 than the proposed project as well. Both VMT and CVMT would increase when compared to existing (2013) baseline conditions which is primarily a result of population and employment growth anticipated to occur throughout the region in any scenario. Transportation and circulation impacts under Alternative 3 would be greater than anticipated for the proposed project.

## 6.4 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

This section compares the impacts of the three alternatives under consideration to those of the proposed project. Table 6-1 shows whether each alternative would have impacts that are less than, similar to, or greater than the proposed project for each of the issue areas studied.

The No Project Alternative (Alternative 1) would not be considered environmentally superior overall. Although it would entail the fewest projects and therefore result in the fewest construction-related impacts and impacts associated with ground disturbance, many of the transportation improvements and greater density development envisioned in the 2014 RTP-SCS would not occur. As a consequence, total VMT, energy usage, emissions of air pollutants, and



GHG emissions impacts would be greater with this alternative as compared to the 2014 RTP-SCS.

Under Alternative 2, the Intensified Transit Alternative, ~~land use patterns would encourage development consistent with the RTP-SCS with an even greater focus on compact development.~~ additional transit projects would be included in the RTP-SCS. The Alternative performs similar or better than the proposed project and is considered to be environmentally superior to the proposed project. While CVMT may be slightly greater under this alternative, overall VMT would be less. Additionally, this alternative results in a decrease in the amount of habitat impacted, a greater use of active transportation modes (biking and pedestrian), greater use of public transit, and a higher level of benefits for environmental justice communities. Additionally, based exclusively on VMT, the Intensified Transit Alternative would result in less GHG and transportation impacts than the 2014 RTP-SCS. Further, this alternative would result in similar impacts to aesthetics, cultural resources, hydrology, and noise.

Alternative 3, the Business as Usual Alternative would not be considered environmentally superior overall. It would entail a similar number of projects; however, they would be auto-oriented and encourage a more dispersed development pattern. Therefore, construction impacts relating to air quality and GHG emissions would be similar to the proposed RTP-SCS, but operational air quality and GHG emissions would be greater than the RTP-SCS as a result of increased VMT.

Based on the information presented herein, the Intensified Transit Alternative (Alternative 2) is determined to be the environmentally superior alternative when considering overall environmental impact relative to the performance metrics and attainment of SB 375 requirements. However, superior performance of this alternative with respect to certain metrics is largely attributable to land use parameters that are beyond the control of KCAG. For example, under this alternative, expansion of existing community boundaries and larger lot single-family residential development would be limited, which would rely upon land use changes by the municipalities within the region that retain land use authority. Therefore, implementation of this alternative and achievement of performance metrics such as lower VMT may not be feasible.

**Table 6-1  
Alternative Comparison**

<b>Issue</b>	<b>Alternative 1: 2040 No Build Scenario</b>	<b>Alternative 2: Intensified Transit</b>	<b>Alternative 3: Business as Usual</b>
Aesthetics	=/+	=	=-
Air Quality	-	=/+	-
Biological Resources	=/+	=/+	=-
Cultural Resources	=/+	+/-	+/-
Energy	-	+	-
Environmental Justice	-	+/-	=
Geology	=	=	=-
Greenhouse Gases	-	+	-
Hydrology	=/+	=	=-
Land Use	=/+	=	-
Noise	+/-	=-	=-
Transportation and Circulation	-	=/+	-
<b>Overall</b>	<b>=-</b>	<b>+</b>	<b>-</b>

+ Superior to the proposed project (reduced level of impact)  
- Inferior to the proposed project (increased level of impact)  
= / + slightly superior to the proposed project in one or more aspects, but not significantly superior  
= / - slightly inferior to the proposed project in one or more aspects, but not significantly inferior  
+/- Some areas inferior to the proposed project, and some areas superior, but not significantly inferior or superior  
= Similar level of impact to the proposed project



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## 7.0 REFERENCES AND PREPARERS

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## 8.0 COMMENTS and RESPONSES

### 8.1 SUMMARY OF REVISIONS TO THE DRAFT EIR

The changes incorporated into this EIR correct minor errors or clarify information. These edits, in addition to other minor or technical edits found in the text of the Final EIR, do not result in presentation of new substantial adverse environmental effects and do not affect the conclusions of the EIR. As such, this Addenda and Errata has been prepared pursuant to CEQA Guidelines Section 15164(a). Deletions in the Final EIR are indicated by strikethrough text and insertions are indicated by underlined text. The Final EIR sections (through Section 8.0) reflect the final, corrected EIR text.

Edits in the Final EIR compared to the Draft EIR primarily relate to clarifying that with the RTP-SCS, KCAG does not propose any land use changes. Rather the land use patterns envisioned by the RTP-SCS are based on the General Plan land use and zoning designations of the local agencies (the four incorporated cities and the county). The RTP-SCS would be consistent with the land use and zoning designations in the incorporated and unincorporated areas. Further, the anticipated growth associated with General Plan land use and zoning designations of the local agencies has already undergone individual environmental review by each agency. Thus while this EIR considers the land use component of the SCS, no changes to land use are proposed by the RTP-SCS and thus no environmental impacts related to land use and land development, beyond those identified and disclosed previously by the local agencies in their General Plan EIRs, would occur. Rather, the focus of the EIR analysis and any mitigation measures that may be required are related to transportation projects associated with the RTP.

Edits in the Final EIR are also intended to clarify that project sponsors implementing subsequent transportation projects would undertake future environmental review for projects in the proposed 2014 RTP-SCS. These agencies would include the cities within Kings County as well as Kings County, Caltrans, and public transit agencies. In sponsoring individual projects, local agencies may choose to take advantage of the streamlining benefits of the Program EIR, or to engage in their own environmental review without use or reference to the Program EIR. If they so choose, these agencies would be able to prepare subsequent environmental documents that incorporate by reference the appropriate information from this Program EIR regarding secondary effects, cumulative impacts, broad alternatives, and other relevant factors.

### 8.2 COMMENTS AND RESPONSES

In accordance with Section 15088 of the California Environmental Quality Act Guidelines, the Kings County Association of Governments (KCAG), as the lead agency, has reviewed the comments received on the Draft Programmatic Environmental Impact Report (PEIR) for the 2014 Regional Transportation Plan - Sustainable Communities Strategy (RTP- SCS) and has prepared written responses to the written and verbal comments received. The Draft PEIR was circulated for a 45-day public review period that began May 9, 2014 and was scheduled to conclude on June 25, 2014. KCAG received requests to extend the public review period, which was extended to July 15, 2014, for a total public review period of 68 days. The comment letters included herein were submitted by public agencies and private organizations.





Each comment that KCAG received is included in this section. Responses to these comments have been prepared to address the environmental concerns raised by the commenters and to indicate where and how the PEIR addresses pertinent environmental issues.

The Draft PEIR and this Comments and Responses document collectively comprise the Final PEIR for the 2014 RTP-SCS PEIR. Any changes made to the text of the Draft PEIR correcting information, data or intent, other than minor typographical corrections or minor working changes, are noted in the Final PEIR as changes from the Draft PEIR. Corrections or additional text discussed in the responses to comments are also shown in the text of the Final PEIR in ~~strike through~~ (for deleted text) and underline (for added text) format.

The comment letters have been numbered, and each issue within a comment letter, if more than one, has a number assigned to it (For example, letter 1, comment 2 is referenced as 1.2). Each comment letter is reproduced in its entirety with the issues of concern lettered in the right margin. References to the responses to comments identify first the letter number, and second, the lettered comment.

The focus of the responses to comment is the disposition of environmental issues that are raised in the comments, as specified by Section 15088 (b) of the State CEQA Guidelines. Detailed responses are not provided to comments on the merits of the proposed project.

Commenters on the Draft PEIR include public agencies and private entities. In total, KCAG received three comment letters on the Draft PEIR. The commenters are listed in Table 8-1.

**Table 8-1**  
**Commenters on the Draft EIR**

<b>Letter No.</b>	<b>Commenter</b>	<b>Agency/Organization</b>	<b>Date Received</b>
1	Len Marino, Chief Engineer	Central Valley Flood Protection Board	June 2, 2014
2	Dianna Gomez, Central Valley Regional Director, and Mark A. McLoughlin, Director of Environmental Services	California High Speed Rail Authority	June 6, 2014
3	Representative from the Kings County Farm Bureau	Kings County Farm Bureau	July 15, 2014



**CENTRAL VALLEY FLOOD PROTECTION BOARD**

3310 El Camino Ave., Rm. 151  
SACRAMENTO, CA 95821  
(916) 574-0609 FAX: (916) 574-0682  
PERMITS: (916) 574-2380 FAX: (916) 574-0682

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Letter 1

May 28, 2014

Mr. Bruce Abanathie  
Kings County Association of Governments  
339 W. "D" Street, Suite B  
Lemoore, California 93245

Subject: CEQA Comments: 2014 Kings County Regional Transportation Plan and Sustainable Communities Strategy, Draft Environmental Impact Report, SCH No. 2013101053

Location: Kings County

Dear Mr. Abanathie:

Central Valley Flood Protection Board (Board) staff has reviewed the subject document and provides the following comments:

The proposed transportation plan may result in projects located adjacent to or over the following regulated streams under Board jurisdiction pursuant to Title 23, California Code of Regulations (23 CCR), Section 112:

<u>Stream</u>	<u>County - Limits</u>
Clarks Fork	Kings
Crescent Bypass	Kings and Fresno - North Fork Kings River
Cross Creek	Kings and Tulare - Nevada Avenue to St. Johns River
Dutch John Cut Slough	Kings
Hughes Creek	Kings
Fresno Slough	Kings and Fresno
James Bypass	Kings and Fresno
Kerns River	Kern and Kings
Kern River Bypass Channel	Kern and Kings
Kings River	Kings, Tulare and Fresno - to Pine Flat Reservoir

1.1

The Board enforces its regulations for the construction, maintenance, and protection of adopted plans of flood control that protect public lands from floods. Adopted plans of flood control include federal-State facilities of the State Plan of Flood Control, regulated streams, and designated floodways. The geographic extent of Board jurisdiction includes the Central Valley, and all tributaries and distributaries of the Sacramento and San Joaquin Rivers, and the Tulare and Buena Vista basins (23 CCR, Section 2).

Pursuant to 23 CCR a Board permit is required prior to working in the Board's jurisdiction for the following:

- Placement, construction, reconstruction, removal, or abandonment of any landscaping, culvert, bridge, conduit, fence, projection, fill, embankment, building, structure, obstruction, encroachment, excavation, the planting, or removal of vegetation, and any repair or maintenance that involves cutting into the levee (23 CCR Section 6);

1.2

- Existing structures that predate permitting, or where it is necessary to establish the conditions normally imposed by permitting. The circumstances include those where responsibility for the encroachment has not been clearly established or ownership and use have been revised (23 CCR Section 6);
- Vegetation plantings require submission of detailed design drawings; identification of vegetation type; plant and tree names (both common and scientific); quantities of each type of plant and tree; spacing and irrigation method; a vegetative management plan for maintenance to prevent the interference with flood control operations, levee maintenance, inspection, and flood fight procedures (23 CCR Section 131).

1.2

Other local, federal and State agency permits may be required and are the responsibility of the applicant to obtain.

Board permit application forms and our complete 23 CCR regulations can be found on our website at <http://www.cvfpb.ca.gov/>. Maps of the Board's jurisdiction including all tributaries and distributaries of the Sacramento and San Joaquin Rivers, and Board designated floodways are also available on a Department of Water Resources website at <http://gis.bam.water.ca.gov/bam/>.

#### Additional Considerations Related to Potential Impacts of Vegetation and Hydraulics

Accumulation and establishment of woody vegetation that is not managed may have negative impacts on channel capacity and may increase the potential for levee over-topping or other failure. When vegetation develops and becomes habitat for wildlife, maintenance to initial baseline conditions typically becomes more difficult as the removal of vegetative growth may be subject to federal and State resource agency requirements for on-site mitigation. The proposed project should include mitigation measures to avoid decreasing floodway channel capacity.

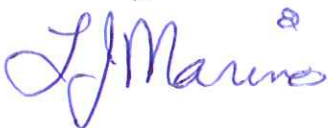
1.3

Adverse hydraulic impacts of proposed encroachments could impede flood flows, reroute flood flows, and/or increase sediment accumulation. The proposed project should include mitigation measures for channel and levee improvements and maintenance to prevent and/or reduce hydraulic impacts. If possible off-site mitigation outside of the Board's jurisdiction should be used when mitigating for vegetation removed at the project location.

1.4

If you have any questions please contact James Herota at (916) 574-0651, or via email at [james.herota@water.ca.gov](mailto:james.herota@water.ca.gov).

Sincerely,



Len Marino, P.E.  
Chief Engineer

cc: Governor's Office of Planning and Research  
State Clearinghouse  
1400 Tenth Street, Room 121  
Sacramento, California 95814

### *Letter 1*

COMMENTER: Len Marino, Chief Engineer, Central Valley Flood Protection Board

DATE: June 2, 2014

RESPONSE:

#### Response 1.1

The commenter states that the proposed transportation projects in the 2014 RTP-SCS would be located adjacent to or within several regulated streams under jurisdiction of the Central Valley Flood Protection Board, pursuant to Title 23, California Code of Regulations, Section 112:

- Clarks Fork;
- Crescent Bypass;
- Cross Creek;
- Dutch John Cut Slough;
- Hughes Creek;
- Fresno Slough;
- James Bypass;
- Kern River;
- Kern River Bypass Channel; and,
- Kings River.

A discussion of the Flood Protection Board's jurisdiction over these streams has been added to Section 4.9, *Hydrology and Water Resources*, of the Final PEIR.

#### Response 1.2

The commenter states that a permit from the Board would be required prior to conducting certain activities in areas under the Board's jurisdiction. The comment is noted.

#### Response 1.3

The commenter states that the accumulation and establishment of unmanaged woody vegetation may have adverse impacts on channel capacity and may increase the potential for over-topping of levees. As described by the commenter and as discussed in Section 4.3, *Biological Resources*, transportation projects in accordance with the 2014 RTP-SCS would be required to comply with state and federal permitting requirements for vegetation removal within jurisdictional waterways. Individual projects would be required by project sponsors to provide sufficient drainage capacity.

#### Response 1.4

The commenter states that projects which encroach on floodway channels can impede or reroute flood flows, and/or increase sediment accumulation. During project design and development review, individual transportation projects would be required by project sponsors to avoid encroachment into the floodway or provide necessary drainage improvements. As

described in Section 4.14, *Less than Significant Environmental Factors*, the 2014 RTP-SCS does not contain project actions that would significantly change the drainage pattern of an area or result in flooding associated with the alteration of a stream or river. The majority of projects would occur within existing rights-of-way and would not generate significant new surface water runoff that could exceed the capacity of stormwater infrastructure. Impacts would be less than significant.

June 6, 2014

## BOARD MEMBERS

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Bruce Abanathie  
Regional Planner III  
Kings County Association of Governments  
339 West D Street, Suite B  
Lemoore, CA 93245

Subject: Kings County Draft 2014 Regional Transportation Plan/Sustainability Community Strategy and Draft Programmatic Environmental Impact Report

Dear Mr. Abanathie:

Thank you for the opportunity to comment on the documents cited above. The California high-speed rail program will contribute to economic development and a cleaner environment, preserve and reduce the urbanization of agricultural lands, promote increased livability and efficient mobility within the Central Valley. The Kings County Association of Governments Draft 2014 Regional Transportation Plan/Sustainability Community Strategy (RTP/SCS) promotes regional transit connectivity. The high-speed rail will provide an additional travel option connecting travelers in the KCAG region to the Bay Area and the Los Angeles Basin and other cities in Southern California.

The California High-Speed Rail Authority (Authority) California High-Speed Train Project Final Environmental Impact Report/Environmental Impact Statement for the Fresno to Bakersfield section was certified by the Authority on May 7, 2014. The document identifies the footprint of the high-speed rail Kings/Tulare Regional Station, which is located in Kings County. It is envisioned that the Kings/Tulare Regional Station will serve both Kings and Tulare Counties.

The Authority recognizes the importance of station-area development to the success of the high-speed rail system. To support station communities the Authority developed the Station Area Planning Partnership Program that will provide funds to the local jurisdiction for land use planning, transit connectivity planning, and supportive services in the station area within a half mile of seven high-speed rail stations.

The Authority has invited the Kings County Association of Governments to apply to Partnership Program to plan a regional transportation hub at the Kings/Tulare Regional Station that would provide quick transit connections to the historic downtowns of cities like Hanford and Visalia. The Authority also supports station communities by providing information including but not limited to sustainability, livability and transit connectivity to assist development around station areas. This information should be included in the Kings County Draft 2014 RTP/SCS high-speed rail section, of Chapter 6 Public Transportation (pages 6-10).

EDMUND G. BROWN JR.  
GOVERNOR

Implementation of the high-speed rail program will result in reductions to greenhouse gas emissions (GHG) across the state, including Kings County. Please update the GHG emissions analysis to reflect the program in that analysis.

Thank you for considering these comments. The intent of these comments is to ensure consistency of the Kings County Associate of Government's Draft 2014 RTP/SCS with the Authority's current status of work on the high-speed rail project. The Authority looks forward to ongoing collaboration with Kings County Associate of Government on issues of shared interest.

We invite you to visit our website at [www.hsr.ca.gov](http://www.hsr.ca.gov) for additional project information. Please contact Mr. Terry Ogle, Central Valley Regional Project Manager, at (559) 445-5113 or [terry.ogle@hsr.ca.gov](mailto:terry.ogle@hsr.ca.gov) if you have any questions.

Sincerely,



Diana Gomez  
Central Valley Regional Director  
[diana.gomez@hsr.ca.gov](mailto:diana.gomez@hsr.ca.gov)  
(559) 445-5172



Mark A. McLoughlin  
Director of Environmental Services  
[mark.mcloughlin@hsr.ca.gov](mailto:mark.mcloughlin@hsr.ca.gov)  
(916) 403-6934

cc: Terry Ogle, Fresno Office, California High-Speed Rail Authority  
Barbara Gilliland, Director of Planning, Parsons Brinckerhoff  
Caltrans District 6 Regional Planning

2.3

*Letter 2*

COMMENTER: Dianna Gomez, Central Valley Regional Director, and Mark A. McLoughlin, Director of Environmental Services, California High Speed Rail Authority

DATE: June 6, 2014

RESPONSE:

Response 2.1

The commenter states that the high-speed rail project will provide an additional travel option connecting travelers in the KCAG region to the Bay Area and the Los Angeles Basin and other cities in Southern California and that the envisioned that the Kings/Tulare Regional Station (which would be located in Kings County) will serve both Kings and Tulare Counties.

The comment is noted. No changes to the EIR are warranted. Information regarding high-speed rail and any stations located in Kings County will be considered for the 2018 RTP since at this time there is not information specific to the KCAG region, but rather statewide level assessments.

Response 2.2

The commenter invites the Kings County Association of Governments to apply to Partnership Program to plan a regional transportation hub at the Kings/Tulare Regional Station that would provide quick transit connections to the historic downtowns of cities like Hanford and Visalia.

The comment is noted. No changes to the EIR are warranted. As noted in response 2.1, information regarding high-speed rail and any stations located in Kings County will be considered for the 2018 RTP since at this time there is not information specific to the KCAG region, but rather statewide level assessments.

Response 2.3

The commenter suggests that implementation of the high-speed rail program will result in reductions to greenhouse gas emissions (GHG) across the state, including Kings County and that the GHG emissions analysis should be updated to reflect the high speed rail program in that analysis.

The comment is noted. However, consideration of the GHG reductions associated with the high-speed rail program would be speculative at this time as the RTP projects list does not include any high speed rail stations or projects. No changes to the EIR are warranted. As noted in response 2.1, information regarding high-speed rail and any stations located in Kings County will be considered for the 2018 RTP since at this time there is not information specific to the KCAG region, but rather statewide level assessments.





July 14, 2014

Letter 3

Kings County Association of Governments  
339 West D Street, Suite B  
Lemoore, CA 93245

**RE: Draft 2015 Federal Transportation Improvement Program, Draft 2014 Regional Transportation Plan/Sustainable Communities Strategy (RTP/STS), Draft Environmental Impact Report and Corresponding Draft Conformity Analysis**

The Kings County Farm Bureau (KCFB) respectfully submits the comments outlined below to be entered into the public record of the Environmental Impact Report that is made a part of the 2014 Regional Transportation Plan/Sustainable Communities Strategy (RTP/STS), Draft Environmental Impact Report and Corresponding Draft Conformity Analysis. KCFB is a non-profit organization whose purpose is to protect, preserve and advocate for agricultural interests in Kings County. The following comments reflect the opinion of the approximately 700 farmers and agribusinesses that KCFB represents.

We have previously submitted verbal testimony to KCAG commissioners expressing our concerns with regard to the stakeholder process and the negative ramifications that the above mentioned documents could have on long-term land use decisions impacting agriculture. We reiterate our concerns here that the public/stakeholder participation process was deficient, the ability to access documents on the agency website was cumbersome, and there was a lack of understanding by staff that the RTP/STS and Draft EIR rely on mitigation measure that usurp local land use planning responsibilities. As an example, our understanding was that the public comment was extended to July 15<sup>th</sup> for comments, yet the web page notice states as of today "The Public Comment Period for the DRAFT Environmental Impact Report has been extended to 5:00 p.m. on June 15, 2014". Additionally, the web site directs the user to the Planning page for the RTP/SCS, yet other documents are accessible through a direct link. For the unaccustomed stakeholder, use is confusing, and documents should be provided as a direct link. While we have an appreciation for the efforts of staff, these types of miscommunications lead to confusion and diminish public participation. These are important documents and require vigilance in ensuring that the final outcome is prepared with the utmost consideration for the number one industry in Kings County which is agriculture.

3.1

First, we have a great appreciation for the time and resource put forth by consultants in addressing our regional specific environmental issues. However, blatant “wholesale cut & paste” from related projects should be kept to a minimum. In this case, the Table of Contents identifies the document as the “Tulare County Association of Governments 2014 RTP-SCS Program EIR”. In comparing this draft EIR with the Tulare County document, we find that there is significant similarity between the two, causing us to be suspect as to whether the unique characteristics of Kings County were truly considered.

3.1

***Those issues we consider problematic in future land use decisions addressed within the Draft Environmental Impact Report and Corresponding Draft Conformity Analysis are:***

1. Agricultural conservation easements could be implemented by directly purchasing easements or donating mitigation fees to a local, regional, or statewide organization or agency whose purpose includes the acquisition and stewardship of agricultural conservation easements.

3.2

2. Table 4.8-1 “Existing and Projected GHG Emissions Reported in the Regional Climate Action Plan” is deficient in that it identifies only the GHG Emissions identified for two communities, Avenal and Hanford. The San Joaquin Valley Unified Air Pollution Control District, and the consultants that developed the Climate Action plan, had identified a complete inventory on a per capita basis for all of Kings County. Only referencing a portion of the inventory is misleading and infers that other jurisdictions are not participating in addressing GHG emissions, which they are. The per capita emissions that were utilized for the Climate Action Plan and accompanying inventory based upon those per-capita emissions should be utilized to illustrate the GHG emissions for the project area, Kings County. Table 4.8-2 adequately describes the GHG applicable in this case.

3.3

3. Impact GHG-1 Applicable GHG-reducing measures include measures that are applicable to NOx reduction strategies than GHG emission strategies. These measures should be stricken and replaced with the significance thresholds from the San Joaquin Valley Unified Air Pollution District. At a bare minimum, the idle times should be stricken. Keep in mind, the Cap & Trade program, and the California Air Resource Board’s reformulated fuel standard both control GHG emission Levels for the fuel sector, no surplus emission reduction will be achieved from these measures. Also, to be clear, we recommend that all mitigation measures be identified as only applicable to the transportation related project as outlined in the 2015 federal Transportation Improvement Program, Draft 2014 Regional Transportation Plan. For the most part this is done with many mitigation measures, but not all, as is recommended.

3.4

4. Page 4.9-4 states “The results of a subsequent study (1998) conducted by the USGS on nitrate and pesticide trends in groundwater in the eastern San Joaquin Valley indicate that groundwater drinking water supplies have been degraded by fertilizers and pesticides. Of approximately 100 various types of wells monitored, nitrate concentrations exceeded U.S. EPA drinking water standards about one-fourth of the time and pesticides were identified about two-thirds of the time (although mostly at low concentrations). This text is a cut-and-paste from the Tulare County EIR, and should be stricken, as they do not reflect the accurate conditions in Kings County.

3.5

5. 5(b) Rural roadway alignments shall follow property lines to the extent feasible, to minimize impacts to the agricultural production value of any specific property. Farmers should be compensated for the loss of agricultural production at the margins of lost property, based on the amount of land deeded as road right-of-way, as a function of the total amount of production on the property and based on industry standard appraisal of land value.

3.6

6. 5(c) When new roadway extensions are planned in areas that contain sensitive farmland, the local jurisdiction in which the RTP project is located shall assure that project-specific environmental reviews consider the use of agricultural conservation easements on land of at least equal quality and size as compensation for the loss of agricultural land. Agricultural conservation easements could be implemented by directly purchasing easements or donating mitigation fees to a local, regional, or statewide organization or agency whose purpose includes the acquisition and stewardship of agricultural conservation easements.

3.7

7. We take issue in the Biological Resource section, with the use of National Inventory Databases that inaccurately depict land uses. One of the more egregious is Figure 4.3.2, which identifies the lake bed farming region as wetlands. This must be removed. We request additional time to review this section in more detail, since it impacts the industry to such a great degree. Please note that many of the illustrations, such as this, are title with “PEIR”, which denotes a program EIR as opposed to Draft.

3.8

The Kings County Farm Bureau does agree with the recommended preferred Superior Environmental Alternative, Alternative 2. However, as noted in the document the mitigation measures required in the document are not enforceable by the lead agency (KCAG) and therefore this leads us to question the need and expense for an EIR. Our exposure to the public workshop process leads us to conclude that additional alternatives would have been help full and should have been disclosed, since at the workshop we attended, with the seven individuals in attendance, it was explained that the participants were limited to only selecting two.

3.9

**Other comments to specific chapters and sections of the Draft 2014 Regional Transportation Plan/Sustainable Communities Strategy (RTP/ST are as follows:**

1. Chapter 5: Goods Movement; This chapter examines ways to ensure that freight and commodities are efficiently transported through Kings County and the region. The majority of this chapter considers the two significant modes used for goods movement: railroads and freight trucks. Special attention is given to the needs of the agricultural industry in moving its products and the transportation of hazardous materials through Kings County.

3.10

2. The EIR and RTP/SCS Plan discusses aviation, first in Chapter 3, Section V Aviation Goals, Policies, and Objectives, A. Policy "Work with local agencies to ensure compatible land uses around existing airports to reduce noise conflicts." This should be amended to include "noise and structure conflicts", since height and density of structures on airport approaches is also a critical restriction relation to airport operation. Also, please note that the Corcoran Airport is classified as public in this chapter, and it is no longer a public airport. In Chapter 7, Aviation, on page 7-14 states that the Corcoran airport does not meet minimum weight requirements for the longest runway weight rating. The Corcoran Airport is not a public Airport and the operator of the airport is unaware of deficiency identified. While we agree with the overall positive manner in which agricultural aviation is discussed, we feel that additional discussion with the industry is warranted. The section should be changed to reflect the Corcoran Airport is "no longer public", and the deficiencies identified should be clarified with the owner. In addition, the Overview to Chapter 7 should modify the opening sentence to state "General aviation aircraft and airports are essential to the viability and economy of communities and businesses in Kings County. While this document is concerned with transportation, the land use discussions herein are meant to support local planning efforts and not usurp the authority of the local jurisdictions." The discussions presented regarding noise and development strategies at specific locals may be interpreted as imposing land use decisions beyond the authority of the KCAG

3.11

3. On page 4-9, Growth Trends" identifies Corcoran as California's Center for industrial farming. Make no mistake, this is a negative connotation and frankly depicts this community unfairly while disregarding smaller farms and local family owned businesses. This statement should be changed to reflect the pride the community adopted many years ago and currently displays on their city entrance sign as the "Farming Capital of the World". The text notes that there is extensive use of heavy trucks and machinery over city streets, there is not; there are specific truck routes identified just the same as other local communities in our county. Corcoran should not be singled out as it is in this section. Most commodities are shipped out by rail. Special attention is needed to maintain the regional route serving Corcoran due to the rural nature of the area.

3.12

4. With regard to High Speed Rail (HSR); No mention is made of High Speed Rail and the impact of the preferred alternative on circulation designation in either Corcoran or Hanford. This could be a deficiency and addressing it here impacts Kings County. This could be addressed through language specifying that HSR would have to mitigate any local impacts on transportation routes. This discussion should be added on page 4-1, regional overview. Further, Page 6-18 , 4. discusses benefits and even recommends a station downtown, which presumably is to be Hanford. This sentence should be deleted and the whole discussion on HSR remain neutral with the exception that regional transportation routes and local planning needs be addressed by funding from HSR.

3.13

5. Page 4.45 should include a brief discussion identifying the disadvantaged communities in Kings County qualifying for the ATP funds. (Item 6).

6. Page 4-58, Enviro-screen is included with no explanation of the program. The Enviro screen illustration should be stricken. The data is misleading in the context being used.

3.14

7. Figure 5-4 should identify BNSF railroad east of Corcoran as abandoned. Same in figure 5-7. Page 5-12, (figure 5-10) Railroad abandonment should identify the BNSF east from Corcoran as abandoned, or st least note the abandoned route.

8. Page 8-4, number 16, implementation strategies; needs to be amended to state that abandoned rail lines through agricultural production property should not be utilized for general public recreational use. Farm security requirements and proximity to agricultural operation make this option infeasible.

9. Chapter 12, sustainable communities strategy, section 2.3, paragraph 2, makes the statement that that KCAG staff spearheaded the Kings County Blueprint process. For documentation purposes, it is our understanding that Kings County Community Development Staff were instrumental in bringing stakeholders to the table and addressing the Blueprint, not KCAG. It should be noted that the Kings County Community Development Department was honored twice - first with an Award of Achievement, Community Plans - Unincorporated Community for its general plan and then with an Award of Merit, Sustainable Development Policies for its General Plan, land use and resource conservation elements.

3.15

10. Under Air quality; Chapter 10 needs to reflect current developments that have transpired post 2006 referenced in the report. On May 6, 2014, the District submitted a formal request that the U.S. EPA determine that the Valley has attained the federal 1-hour ozone standard. Per federal requirements, the District's submittal includes a clean data finding and a finding that attainment is due to permanent and enforceable emissions reductions. For the first time in recorded history, in 2013, the Valley had zero violations of the 1-hour ozone standard

3.16

established by EPA under the federal Clean Air Act. The Valley now meets the 1-hour ozone standard based on the most recent three year period air monitoring data (2011-2013). While not approved by the EPA, the District has formally made the request and should be noted in this document.

3.16

***In Conclusion:***

Fundamentally, our organization’s overall experience with the 2015 federal Transportation Improvement Program, Draft 2014 Regional Transportation Plan/Sustainable Communities Strategy (RTP/STS), Draft Environmental Impact Report was one of frustration. Our organization is more familiar with direct stakeholder contact from the inception of such projects, and we are accustomed to principle land use and planning agency, Kings County Community Development, being lead on land use issues. We are interested in receiving the final determination from the California Air Resource Board regarding the acceptance of this plan, and the overall compliance of the San Joaquin Valley MPO to the Greenhouse Gas per capita reduction targets.

3.17

The Kings County Farm is committed to working with all of our local agencies in addressing our common interests for the betterment of all.

*Letter 3*

COMMENTER: Kings County Farm Bureau

DATE: July 14, 2014

RESPONSE:

Response 3.1

The commenter states the background of the Kings County Farm Bureau and expresses frustration with the public/stakeholder participation process related to the RTP-SCS. In addition, the commenter expresses concern that the EIR analysis is similar to the Tulare County RTP EIR and not specific to Kings County and that the RTP-SCS and Draft EIR rely on mitigation measures that usurp local land use planning responsibilities.

A public scoping meeting for the EIR was held on November 6, 2013 to solicit input on the scope and content of the environmental analysis in the Draft EIR. In addition during the public review period, KCAG Commission meetings and public hearings were held on May 28, 2014 and June 25, 2014 to consider the Draft EIR and provided an opportunity for the public to comment. In regard to the concern of the similarity of the Draft EIR with other EIRs such as the RTP-SCS prepared by the Tulare County Association of Governments, the environmental analysis and associated mitigation measures provided in the Draft EIR are intended to provide general best-management-practices for implementation by sponsor agencies once the individual project moves forward and is ready to be constructed/implemented. The measures are generally similar to those of other RTP-SCS EIRs in the Central Valley and statewide as the general impacts associated with RTP projects throughout the region are somewhat similar. Where applicable, measures are specific to the project area (all of Kings County) though for the most part, because of the vast number and varying differences in projects on the RTP list and their locations across various landscapes across the County, the measures are intended to provide general direction for Sponsor Agencies to utilize and to craft more project-specific measures as necessary.

In regard to the RTP-SCS and Draft EIR relying on mitigation measures that usurp local land use planning, the Final EIR has been updated (as described in Section 1.0, *Introduction*, and throughout the Final EIR) to clarify that KCAG does not propose any land use changes, but rather the land use patterns envisioned by the RTP-SCS are based on the General Plan land use and zoning designations of the local agencies (the four incorporated cities and the county). The RTP-SCS would be consistent with the land use and zoning designations in the incorporated and unincorporated areas. Further, as described above, the mitigation measures are intended to provide general direction for Sponsor Agencies to utilize and to craft more project-specific measures as necessary. In sponsoring individual projects, local agencies may choose to take advantage of the streamlining benefits of the Program EIR, or to engage in their own environmental review without use or reference to the Program EIR.

Response 3.2



The commenter suggests that agricultural conservation easements could be implemented by directly purchasing easements or donating mitigation fees to a local, regional, or statewide organization or agency whose purpose includes the acquisition and stewardship of agricultural conservation easements.

The comment is consistent with Mitigation Measure LU-5(c) contained in Section 4.10, *Land Use*.

### Response 3.3

The commenter suggests that Table 4.8-1 is deficient in that it identifies only the GHG Emissions for two communities, Avenal and Hanford, and that only referencing a portion of the inventory is misleading and infers that other jurisdictions are not participating in addressing GHG emissions, which they are. The commenter also expresses that per capita emissions that were utilized for the San Joaquin Valley Unified Air Pollution Control District Climate Action Plan and accompanying inventory based upon those per-capita emissions should be utilized to illustrate the GHG emissions for the project area, the KCAG region. The commenter also states that Table 4.8-2 adequately describes the GHG applicable for the proposed RTP-SCS.

As stated in Section 4.8, Greenhouse Gas Emissions, the Kings County Community-Wide Greenhouse Gas Emissions Inventory was prepared by the SJVAPCD in April 2013 to identify the major sources and quantities of GHG emissions produced county-wide in 2005 and forecast how emissions may change over time. Following the inventory, KCAG facilitated preparation of a Regional Climate Action Plan through grant funding provided by the State of California. The grant was also used to fund the emissions inventory as the first step in the process. The inventory was prepared prior to some jurisdictions dropping out of the project. The Regional Climate Action Plan sets goals and targets for the reduction of GHG emissions, and outlines policies to help achieve those goals. To date, the cities of Avenal and Hanford have participated in the complete development of the Regional Climate Action Plan (other jurisdictions dropped out as described above). Baseline and projected 2020 GHG emissions from the Regional Climate Action Plan are shown in Table 4.8-1. Communities other than Avenal and Hanford were not listed in Table 4.8-1 because they did not participate in the Regional Climate Action Plan and thus existing and projected GHG emissions reported in the Regional Climate Action Plan are not available for those communities. It is acknowledged that GHG emission reduction efforts are being utilized by other jurisdictions and Table 4.8-2 takes into consideration the efforts of all communities in the region to reduce GHG emissions. In addition, in the Final EIR, a statement above Table 4.8-1 has been added to explain that other jurisdictions in the region besides Avenal and Hanford are participating in efforts to reduce GHG emissions.

### Response 3.4

The commenter suggests that Mitigation Measure GHG-1 includes measures that are applicable to NOx reduction strategies than GHG emission strategies and thus should be stricken and replaced with the significance thresholds from the San Joaquin Valley Unified Air Pollution District. Further, the commenter recommends that all mitigation measures be identified as only applicable to the transportation related projects.





Mitigation Measure GHG-1 is intended to reduce GHG emissions associated with construction equipment. The GHG reducing measures would reduce both GHG and NO<sub>x</sub> emissions. While it is the intent to reduce GHG emissions associated with construction equipment, these measures also subsequently reduce NO<sub>x</sub>, diesel particulate and other emissions, thus improving air quality in addition to reducing GHG emissions related to construction. In regard to mitigation measures identified as only applicable to transportation related projects, the Final EIR has been updated (as shown in ~~strikeout~~/underline) to clarify that mitigation measures are applicable to transportation related projects associated with the RTP.

#### Response 3.5

The commenter suggests the removal of text stating that the results of a subsequent study (1998) conducted by the USGS on nitrate and pesticide trends in groundwater in the eastern San Joaquin Valley indicate that groundwater drinking water supplies have been degraded by fertilizers and pesticides as this study does not reflect conditions in Kings County.

The text related to the USGS study has been removed in the Final EIR.

#### Response 3.6

The commenter provides Mitigation Measure LU-5(b) verbatim from the Draft EIR but provides no specific comment. Therefore, no response is necessary.

#### Response 3.7

The commenter provides Mitigation Measure LU-5(c) verbatim from the Draft EIR but provides no specific comment. Therefore, no response is necessary.

#### Response 3.8

The commenter suggests that figures in the Draft EIR that utilize the National Inventory Databases (such as Figure 4.3.2) inaccurately depict land uses and should be removed.

Figure 4.3.2 provides a map of the National Wetlands Inventory Categories and Drainages within Kings County as listed by the U.S. Fish and Wildlife Service (January, 2014). This is an official Wetlands map and the official database of wetlands as provided by the U.S. Fish and Wildlife Service. While this map represents potential wetlands, site specific wetland delineations are necessary to confirm the existence of wetland areas. The figure in the EIR is intended to provide background as to the areas of potential wetlands in the Kings County region. No revisions to the EIR are warranted.

#### Response 3.9

The commenter states that they support Alternative 2. However, the commenter questions whether an EIR is necessary and suggests that additional alternatives would have been helpful and should have been disclosed to the public.



A stated in Section 1.0, *Introduction*, Section 21000 of the California Government Code, commonly referred to as the California Environmental Quality Act of 1970 (CEQA), requires the evaluation of environmental impacts associated with all planning programs or development projects proposed. As such, the RTP-SCS EIR is an informational document for use by KCAG, other agencies, and the general public in their consideration and evaluation of the environmental consequences of implementing of the proposed 2014 RTP-SCS. As required by Section 15126(d) of the State CEQA Guidelines, this EIR examines a reasonable range of alternatives to the proposed project that could feasibly achieve similar objectives. Further, the State CEQA Guidelines states that an EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation. The Draft EIR considered three alternatives to the proposed RTP-SCS that were developed as part of the public outreach/stakeholder process by KCAG. The commenter does not provide any suggested alternatives that could feasibly achieve similar objectives of the proposed RTP-SCS or avoid or substantially lessen any of the significant effects of the project.

#### Response 3.10

The commenter summarizes the opening lines of Chapter 5 of the RTP but provides no specific comment. Therefore, no response is necessary.

#### Response 3.11

The commenter suggests changes in the RTP related to aviation (including edits in Chapter 3 and Chapter 7) including an edit that he Corcoran Airport is no longer a public use airport.

The comment relates to edits in the RTP, rather than the Draft EIR. The RTP has been updated consistent with the commenter's suggestions. One change was made in the Final EIR (see page 4.11-3) to state that the Corcoran Airport is a private use airport, not a public use airport. This change and the changes to the RTP did not result in any changes to the environmental analysis in the Final EIR.

#### Response 3.12

The commenter suggests that in the RTP, Corcoran should be identified as the "Farming Capital of the World".

The comment relates to the RTP, rather than the EIR. Nevertheless, the RTP has been updated with the commenter's suggested edit. This edit in the RTP does not warrant any changes to the EIR.

#### Response 3.13

The commenter suggests edits to the RTP related to high speed rail.



These comments are specific to the RTP and the RTP has been updated in response to the comment. No changes to the EIR are warranted.

Response 3.14

The commenter suggests edits/updates to the RTP related to disadvantaged communities, Enviro screen, and abandoned rail lines.

These comments are specific to the RTP and the RTP has been updated in response to the comments. No changes to the EIR are warranted.

Response 3.15

The commenter suggests that the RTP incorrectly states that KCAG staff spearheaded the Kings County Blueprint process but rather, the commenter believes that Kings County Community Development Staff were instrumental in bringing stakeholders to the table and addressing the Blueprint, not KCAG.

The comments relate to the RTP and do not relate to the EIR. Nevertheless, the comment is incorrect and no changes to the RTP are necessary.

Response 3.16

The commenter suggests updates in the RTP related to the federal 1-hour ozone standard.

The comment relates to the RTP and does not suggest any changes to the EIR. The RTP has been updated to reflect the suggested edits. However, these edits do not result in any changes to the environmental analysis in the EIR.

Response 3.17

The commenter in conclusion expresses frustration with the process for the RTP-SCS and RTP-SCS EIR.

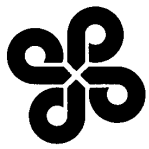
The comment is noted.

## **Appendix A**

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*Notice of Preparation, Initial Study and Responses*





# Kings County Association of Governments

339 W. "D" Street, Suite B, Lemoore, California 93245  
(559) 852-2654 ❖ FAX (559) 924-5632  
[www.kingscog.org](http://www.kingscog.org)

Member Agencies: Cities of Avenal, Corcoran, Hanford and Lemoore, County of Kings

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## Notice of Preparation of a Draft Environmental Impact Report for the 2014 Regional Transportation Plan and Sustainable Communities Strategy

NOTICE IS HEREBY GIVEN that the Kings County Association of Governments (KCAG) is the lead agency for the preparation and review of the Program Environmental Impact Report (EIR) for the 2014 Regional Transportation Plan (RTP) and Sustainable Communities Strategy (SCS). Pursuant to section 15082 of the California Environmental Quality Act (CEQA), KCAG is soliciting views from your agency as to the scope and content of the environmental information which is germane to your agency's statutory responsibilities in connection with the proposed project. KCAG will accept written comments concerning the scope and content of the EIR from interested persons and organizations concerned with the project.

The Draft EIR will be a Program EIR. Per the CEQA Guidelines, a Program EIR is an EIR that may be prepared on a series of actions that can be characterized as one large project. The purpose of a Program EIR is to allow the lead agency to consider broad policy alternatives and program-wide mitigation measures at an early time when the agency has greater flexibility to deal with basic problems or cumulative impacts.

A summary of the project description and probable environmental effects associated with the 2014 RTP and SCS is provided in the attached CEQA Initial Study. The Initial Study will be available for review at the KCAG office, located at 339 W. "D" Street, Suite B Lemoore, CA 93245 and on the KCAG website at [www.kingscog.org](http://www.kingscog.org) required by State law mandate your response be sent at the earliest possible date but not later than 30 days after receipt of this notice.

KCAG will hold a public information/EIR scoping meeting on **Wednesday November 6, 2013** in the Lemoore Center of the Kings County Schools Administration located at 876 East D Street, Lemoore, CA 93245, at 6:00 p.m. The purpose of the meeting is to solicit input on the scope and content of the environmental analysis that will be included in the Draft EIR.

The 30-day public review and comment period will commence on October 18, 2013 and conclude November 18, 2013 at 5:00 p.m. Public comments may be submitted in writing by 5:00 p.m. on November 15 to Bruce Abanathie at the address below.

Contact Person: Bruce Abanathie  
Kings County Association of Governments  
339 W. "D" Street, Suite B  
Lemoore, CA 93245  
(559) 852- 2584  
[Bruce.Abanathie@co.kings.ca.us](mailto:Bruce.Abanathie@co.kings.ca.us)

Kings County Association of Governments

# **2014 Kings County Regional Transportation Plan and Sustainable Communities Strategy (RTP-SCS)**

## **Initial Study**



**October 2013**

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**2014 Kings County  
Regional Transportation Plan and  
Sustainable Communities Strategy (RTP-SCS)**

**Initial Study**

*Prepared for:*

**Kings County Association of Governments**  
339 W. "D" Street, Suite B  
Lemoore, CA 93245  
*Contact:* Bruce Abanathie

*Prepared by:*

**Rincon Consultants, Inc.**  
1530 Monterey Street, Suite D  
San Luis Obispo, CA 93401

October 2013

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## TABLE OF CONTENTS

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	Page
Introduction	
Legal Authority and Environmental Determination .....	1
Evaluation of Possible Environmental Impacts and Significance Determination .....	1
Initial Study	
Project Title .....	2
Lead Agency Name and Address .....	2
Contact Person and Phone Number .....	2
Project Sponsor .....	2
Project Location .....	2
General Plan and Zoning Designations .....	2
Public Agencies Whose Approval May Be Required .....	2
Description of Project .....	3
Environmental Factors Potentially Affected .....	4
Determination .....	5
Evaluation of Environmental Impacts .....	6
Aesthetics .....	6
Agriculture and Forestry Resources .....	6
Air Quality .....	8
Biological Resources .....	8
Cultural Resources .....	9
Geology and Soils .....	10
Greenhouse Gas Emissions .....	11
Hazards and Hazardous Materials .....	11
Hydrology and Water Quality .....	12
Land Use and Planning .....	13
Mineral Resources .....	14
Noise .....	14
Population and Housing .....	15
Public Services .....	15
Recreation .....	16
Transportation/Traffic .....	16
Utilities and Service Systems .....	17
Mandatory Findings of Significance .....	18
References .....	19



## INTRODUCTION

### LEGAL AUTHORITY AND ENVIRONMENTAL DETERMINATION:

This Initial Study (IS) has been prepared in accordance with the *California Environmental Quality Act (CEQA) Guidelines* and relevant provisions of CEQA, as amended.

**Initial Study.** Section 15063(c) of the *CEQA Guidelines* defines an Initial Study as the proper preliminary method of analyzing the potential environmental consequences of a project. The purposes of an Initial Study are:

- (1) To provide the Lead Agency with the necessary information to decide whether to prepare an Environmental Impact Report (EIR), or a Negative Declaration, or a Mitigated Negative Declaration, or an Exemption
- (2) To enable the Lead Agency to modify a project, mitigating adverse impacts, thus avoiding the need to prepare an EIR; and
- (3) To provide sufficient technical analysis of the environmental effects of a project to permit a judgment to be made by the Lead Agency, based on the record as a whole, that the environmental effects of a project have been adequately mitigated or require further in-depth study in an EIR.

### EVALUATION OF POSSIBLE ENVIRONMENTAL IMPACTS AND SIGNIFICANCE DETERMINATION:

The following sections of this Initial Study provide discussions of the possible environmental effects of the proposed project for specific environmental issue areas that have been identified on the CEQA Initial Study Checklist. For each environmental issue area, potential effects are evaluated.

A “significant effect” is defined by Section 15382 of the *CEQA Guidelines* as “a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by a project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance.” According to the *CEQA Guidelines*, “an economic or social change by itself shall not be considered a significant effect on the environment, but may be considered in determining whether the physical change is significant.”

Following the evaluation of each environmental effect is a discussion of mitigation measures and the residual effects or level of significance remaining after the implementation of the measures. In those cases where a mitigation measure for an impact could have a significant environmental impact in another issue area, this impact is discussed as a residual effect.

## INITIAL STUDY

### PROJECT TITLE:

2014 Kings County Regional Transportation Plan and Sustainable Communities Strategy (RTP-SCS)

### LEAD AGENCY NAME AND ADDRESS:

Kings County Association of Governments, 339 W. "D" Street, Suite B, Lemoore, CA 93245

### CONTACT PERSON AND PHONE NUMBER:

Bruce Abanathie, Regional Planner, (559) 852- 2584, Bruce.Abanathie@co.kings.ca.us

### PROJECT SPONSOR:

Kings County Association of Governments, 339 W. "D" Street, Suite B, Lemoore, CA 93245

### PROJECT LOCATION:

The study area includes all of Kings County's 1,391 square miles. Located in the southern half of California's San Joaquin Valley, Kings County is bounded by Fresno, Tulare, Kern, Monterey, and San Luis Obispo counties. There are four incorporated cities within the boundaries of Kings County, including Avenal, Corcoran, Hanford, and Lemoore.

### GENERAL PLAN AND ZONING DESIGNATIONS:

The Regional Transportation Plan and Sustainable Communities Strategy (RTP-SCS) is a regional planning document; therefore it covers the entire County. The RTP-SCS will include any and all General Plan land use and zoning designations that are established in the incorporated and unincorporated areas. The RTP-SCS does not propose to change any of these land use and zoning designations; rather, the land use scenario envisioned by the RTP-SCS is based on and would be consistent with the existing General Plan land use and zoning designations as established by the land use authorities in the incorporated and unincorporated areas.

### PUBLIC AGENCIES WHOSE APPROVAL MAY BE REQUIRED:

Approval of the proposed project is at the discretion of the Kings County Association of Governments (KCAG), which is the lead agency for the 2014 RTP-SCS. It should be noted that additional environmental review may be required to be conducted by the project sponsor, as the lead agency for the individual projects contained within the 2014 RTP-SCS, prior to project implementation. Depending on the location of the project, future approvals for individual transportation projects identified in the 2014 RTP-SCS would have to be completed by one or more of the following agencies:



- Kings County Association of Governments
- California Department of Transportation (Caltrans)
- California Public Utilities Commission's Rail Crossings Engineering Section (RCES)
- Cities of Avenal, Corcoran, Hanford, and Lemoore
- County of Kings

## DESCRIPTION OF PROJECT:

The Kings County Association of Governments (KCAG), as both the federally-designated metropolitan planning organization (MPO) and the State-designated regional transportation planning agency (RTPA) for Kings County, is required by both federal and State law to prepare a long-range (at least 20-year) transportation planning document known as a Regional Transportation Plan (RTP). The RTP is an action-oriented document used to achieve a coordinated and balanced regional transportation system. California Government Code §65080 et seq. and Title 23 United States Code (USC) §134 require Regional Transportation Planning Agencies (RTPA) and Metropolitan Planning Organizations (MPO) to prepare long-range transportation plans to: 1) establish regional goals, 2) identify present and future needs, deficiencies and constraints, 3) analyze potential solutions, 4) estimate available funding, and 5) propose investments. State Statutes require that the RTP serve as the foundation for the short-range transportation planning documents: the Regional and Federal Transportation Improvement Programs (RTIP and FTIP).

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

Under both federal and State law, KCAG must update its RTP every four years. The 2014 RTP-SCS is the long-range planning, policy, action, and financial document for the Kings County Region. The RTP-SCS covers a 21-year period from 2014 to 2035 and is an update of the 2011 RTP. The RTP-SCS identifies the region's transportation needs and issues and sets forth actions, programs, and projects to address those needs and issues. The RTP-SCS adopts policies, sets goals, and identifies financial resources to encourage and promote the safe and efficient management, operation, and development of a regional intermodal transportation system that would serve the mobility needs of goods and people. In addition, as the MPO for Kings County, KCAG is required to prepare a SCS that demonstrates how GHG reduction targets will be met through integrated land use, housing, and transportation planning. Thus the RTP-SCS will address both the transportation component of the RTP, as well as the land use component of the SCS. It should be noted that KCAG does not propose any land use changes, but rather the land use patterns envisioned by the RTP-SCS are based on the General Plan land use and zoning designations of the local agencies (the four incorporated cities and the county). The RTP-SCS would be consistent with the land use and zoning designations in the incorporated and unincorporated areas.

ARB set GHG reduction targets for the KCAG region from on-road light-duty trucks and passenger vehicles as a 5% reduction from 2005 emissions levels by 2020 and a 10% reduction from 2005 emissions levels by 2035. These targets apply to the KCAG region as a whole for all on-road light-duty trucks and passenger vehicles emissions, and not to individual cities or sub-regions.

SB 375 specifically states that local governments retain their autonomy to plan local General Plan policies and land uses. The RTP-SCS rather is intended to provide a regional policy foundation that local governments may build upon, if they so choose. As described above, the RTP-SCS does not propose to change any land use and zoning designations; rather, the land use scenario envisioned by the RTP-SCS is based on and would be consistent with the existing local General Plan policies and land use designations as specified by the local agencies. As such, the RTP-SCS includes and accommodates the quantitative growth projections for the region based on the buildout of the local General Plans. SB 375 also requires that the RTP-SCS's forecasted development pattern for the region be consistent with the eight-year regional housing needs as allocated to member jurisdictions through the Regional Housing Needs Allocation (RHNA) process under State housing law.

In addition, the RTP-SCS EIR will lay the groundwork for the streamlined review of qualifying development projects within Transit Priority Areas.<sup>1</sup> Qualifying projects that meet statutory criteria and are consistent with the RTP-SCS are eligible for streamlined environmental review pursuant to CEQA.

#### **ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:**

The environmental factors checked below would be potentially affected by this project, involving at least one impact that would be addressed in the EIR, as indicated by the checklist on the following pages.

- |  |  |   |
|--|--|---|
| <input checked="" type="checkbox"/> Aesthetics                 | <input checked="" type="checkbox"/> Agriculture and Forestry Resources | <input checked="" type="checkbox"/> Air Quality             |
| <input checked="" type="checkbox"/> Biological Resources       | <input checked="" type="checkbox"/> Cultural Resources                 | <input checked="" type="checkbox"/> Greenhouse Gases        |
| <input checked="" type="checkbox"/> Geology/Soils              | <input checked="" type="checkbox"/> Hazards/Hazardous Materials        | <input checked="" type="checkbox"/> Hydrology/Water Quality |
| <input checked="" type="checkbox"/> Land Use/Planning          | <input type="checkbox"/> Mineral Resources                             | <input checked="" type="checkbox"/> Noise                   |
| <input checked="" type="checkbox"/> Population/Housing         | <input checked="" type="checkbox"/> Public Services                    | <input checked="" type="checkbox"/> Recreation              |
| <input checked="" type="checkbox"/> Transportation/Circulation | <input checked="" type="checkbox"/> Utilities/Service Systems          |   |

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<sup>1</sup> A Transit Priority Area is an area within 1/2-mile of high quality transit: a rail stop or a bus corridor that provides or will provide at least 15-minute frequency service during peak hours by the year 2035.



**DETERMINATION:**

On the basis of this initial evaluation:

- I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

---

Bruce Abanathie, Regional Planner  
Kings County Association of Governments

---

Date



**EVALUATION OF ENVIRONMENTAL IMPACTS:**

<b>I. AESTHETICS</b> - <i>Would the project:</i>	<b>Impact to be Addressed in the EIR</b>	<b>Less Than Significant With Mitigation Incorporation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) Have a substantial adverse effect on a scenic vista?	X			
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				X
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	X			
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	X			

a, c-d. Kings County contains many scenic views including riparian corridors, valley oak groves, and mountain and open space areas which could be impacted by projects listed in the RTP-SCS. Projects included in the RTP-SCS and future land use patterns envisioned by the RTP-SCS could adversely affect scenic vistas and resources, degrade the existing visual quality of an area, and/or create new sources of light or glare. As a result, impacts to aesthetic resources will be addressed through preparation of the EIR.

b. Kings County does not contain any County or State designated scenic highways. Therefore, the RTP-SCS would result in no impacts on these resources.

<b>II. AGRICULTURE AND FOREST RESOURCES</b> -- <i>In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. -- Would the Project:</i>	<b>Impact to be Addressed in the EIR</b>	<b>Less Than Significant With Mitigation Incorporation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) Convert Prime Farmland, Unique Farmland, 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?	X			
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	X			
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public				X



<b>II. AGRICULTURE AND FOREST RESOURCES</b> -- <i>In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. -- Would the Project:</i>	<b>Impact to be Addressed in the EIR</b>	<b>Less Than Significant With Mitigation Incorporation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?				
d) Result in the loss of forest land or conversion of forest land to non-forest use?				<b>X</b>
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	<b>X</b>			

a, b, e. A vast amount of the land within the County is devoted to agricultural production. Of the approximately 810,887 agricultural acres within the County, approximately 84% (682,823 acres in 2008) were eligible for or under either Williamson Act or Farmland Security Zone contracts (Kings County General Plan, Resource Conservation Element, 2008). Transportation projects listed in the RTP-SCS and future land use patterns established by the local agency's general plans and envisioned by the RTP-SCS could result in the conversion of some of these farmlands, directly or indirectly. Potential impacts to agricultural resources will be examined in the EIR's Land Use impact analysis (see Section X, *Land Use and Planning*).

c, d. While the County does contain some areas of riparian forest habitat, the County does not contain any areas with existing zoning for forest land, timberland or Timberland Production. Thus transportation projects listed in the RTP-SCS and future land use patterns envisioned by the RTP-SCS would not result in the loss or conversion of forest land and would not conflict with existing zoning for these types of lands. No impact would occur.





<b>III. AIR QUALITY</b> - <i>Would the project<sup>1</sup>:</i>	<b>Impact to be Addressed in the EIR</b>	<b>Less Than Significant With Mitigation Incorporation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) Conflict with or obstruct implementation of the applicable Air Quality Attainment Plan or Congestion Management Plan?	<b>X</b>			
b) Violate any stationary source air quality standard or contribute substantially to an existing or projected air quality violation?	<b>X</b>			
c) Result in a net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<b>X</b>			
d) Expose sensitive receptors to substantial pollutant concentrations?	<b>X</b>			
e) Create objectionable odors affecting a substantial number of people?	<b>X</b>			
<i>1 Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations</i>				

a-e. Kings County is located within the San Joaquin Valley Air Basin (SJVAB). State air quality oversight for the basin is provided by the San Joaquin Valley Air Pollution Control District (SJVAPCD). The SJVAPCD is responsible for implementing programs and regulations required by the Federal and State Clean Air Acts. The SJVAB is in nonattainment with the state and federal 8-hour standard for ozone, and severe nonattainment with the state 1-hour standard for ozone. In addition, the SJVAB is in nonattainment with the federal standard for PM<sub>2.5</sub>, and the state standards for PM<sub>10</sub> and PM<sub>2.5</sub>. The combination of topography and inversion layers in the Central Valley generally prevents dispersion of air pollutants.

The RTP-SCS could increase pollutant emissions from improvements to existing transportation infrastructure or development of additional infrastructure. Future development associated with transportation projects listed in and future land use patterns established by the local agency's general plans and envisioned by the RTP-SCS may increase air pollution due to construction activities and/or operational emissions. Buildout of the proposed RTP-SCS could result in the creation of isolated objectionable odors. Air quality impacts associated with the RTP-SCS will be assessed in the EIR.

<b>IV. BIOLOGICAL RESOURCES</b> - <i>Would the project:</i>	<b>Impact to be Addressed in the EIR</b>	<b>Less Than Significant With Mitigation Incorporation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<b>X</b>			
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 the California Department of Fish and Game or US Fish and Wildlife Service?	<b>X</b>			



<b>IV. BIOLOGICAL RESOURCES -</b> <i>Would the project:</i>	<b>Impact to be Addressed in the EIR</b>	<b>Less Than Significant With Mitigation Incorporation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<b>X</b>			
d) 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?	<b>X</b>			
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<b>X</b>			
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<b>X</b>			

a-f. Existing undeveloped lands in the county provide open space and support habitats that are considered sensitive. Transportation projects contained in and future land use patterns envisioned by the RTP-SCS may have the potential to affect sensitive species, their habitats, and wildlife corridors.

Kings County contains a wide variety of native plant communities, sensitive habitats, and other important wildlife habitats due to the size of the county and its diverse geographic, topographic, and hydrological features. The county encompasses riparian habitat (along the Kings River, Cross Creek, the Kern River channel, and several lesser streams), freshwater marsh, seasonal wetlands, and periodically flooded areas at the southern end of the Tulare Lake Basin, grasslands in the Kettleman Hills and along Cross Creek, oak and conifer forests in the Kreyenhagen Hills, alkali scrub near Guernsey and Lemoore, and desert scrub on the margins of the Tulare Lake Basin and in the hills west of the California Aqueduct. Kings County also contains threatened or endangered wildlife species and plant species that have been recorded in the county as identified in the California Natural Diversity Database (CNDDDB). A Habitat Conservation Plan for the Pacific Gas & Electric (PG&E) San Joaquin Valley operations covers all of Kings County.

Impacts to biological resources which may occur as a result of implementation of transportation projects included in the RTP-SCS will be analyzed in the EIR.

<b>V. CULTURAL RESOURCES -</b> <i>Would the project:</i>	<b>Impact to be Addressed in the EIR</b>	<b>Less Than Significant With Mitigation Incorporation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?	<b>X</b>			
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	<b>X</b>			



<b>V. CULTURAL RESOURCES -</b> <i>Would the project:</i>	<b>Impact to be Addressed in the EIR</b>	<b>Less Than Significant With Mitigation Incorporation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<b>X</b>			
d) Disturb any human remains, including those interred outside of formal cemeteries?	<b>X</b>			

a-d. Many recorded cultural resource sites have been identified in Kings County and the surrounding area. Transportation projects and future land use patterns envisioned by the RTP-SCS have the potential to impact cultural resources. These issues will be addressed in the EIR.

<b>VI. GEOLOGY AND SOILS -</b> <i>Would the project:</i>	<b>Impact to be Addressed in the EIR</b>	<b>Less Than Significant With Mitigation Incorporation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: <ul style="list-style-type: none"> <li>i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.</li> <li>ii. Strong seismic ground shaking?</li> <li>iii. Seismic-related ground failure, including liquefaction?</li> <li>iv. Landslides?</li> </ul>	<b>X</b>			
b) Result in substantial soil erosion or the loss of topsoil?	<b>X</b>			
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<b>X</b>			
d) 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?	<b>X</b>			
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<b>X</b>			

a-e. Kings County has no known major fault systems within its boundaries. The greatest potential for seismic activity in Kings County is posed by the San Andreas Fault, which is located approximately four miles west of the Kings County line (California Geologic Survey, 2010). Future seismic events could produce ground shaking within the Kings County area that could damage structures and/or create adverse health and safety effects. Portions of Kings County are also potentially subject to landslides, subsidence, liquefaction, expansive soils, and erosion. As such, transportation projects contained in and future land use patterns envisioned



by the RTP-SCS have the potential to expose people or structures to adverse effects. These issues will be examined in the EIR.

<b>VII. GREENHOUSE GAS EMISSIONS -</b> <i>Would the project:</i>	<b>Impact to be Addressed in the EIR</b>	<b>Less Than Significant With Mitigation Incorporation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment, based on any applicable threshold of significance?	X			
b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	X			

a-b. It is a primary objective of the RTP-SCS to reduce GHG emissions in the KCAG region from passenger vehicles to target levels established by ARB (a 5% reduction from 2005 emissions levels by 2020 and a 10% reduction from 2005 emissions levels by 2035). Transportation projects and development in accordance with future land use patterns envisioned by the RTP-SCS may result in an increase in greenhouse gas emissions due to construction activities and/or operational emissions. Greenhouse gas emissions associated with the RTP-SCS will be assessed in the EIR.

<b>VIII. HAZARDS AND HAZARDOUS MATERIALS -</b> <i>Would the project:</i>	<b>Impact to be Addressed in the EIR</b>	<b>Less Than Significant With Mitigation Incorporation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	X			
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment?	X			
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	X			
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	X			
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	X			
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	X			
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	X			



<b>VIII. HAZARDS AND HAZARDOUS MATERIALS</b> - <i>Would the project:</i>	<b>Impact to be Addressed in the EIR</b>	<b>Less Than Significant With Mitigation Incorporation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	X			

a-h Transportation projects and future land use patterns envisioned by the RTP-SCS have the potential to create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, as well as through a reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment. Construction of these projects and future land use patterns may also have the potential to emit hazardous emissions and create hazardous waste. In addition, transportation projects may be located in areas with hazardous materials. For projects located within an airport land use plan or, where such a plan has not been adopted, within two miles of Hanford Municipal Airport, Corcoran Airport, or Naval Air Station Lemoore (NAS Lemoore), there may be a potential safety hazard for people residing or working in the project area. Furthermore, projects and future land use patterns envisioned by the RTP-SCS may have the potential to interfere with an adopted emergency response or evacuation plan, as well as expose people or structures to risk involving wildland fires. As such, potential impacts involving hazards and hazardous materials will be evaluated in the EIR.

<b>IX. HYDROLOGY AND WATER QUALITY</b> - <i>Would the project:</i>	<b>Impact to be Addressed in the EIR</b>	<b>Less Than Significant With Mitigation Incorporation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) Violate any water quality standards or waste discharge requirements?	X			
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	X			
c) 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?	X			
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	X			
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	X			
f) Otherwise substantially degrade water quality?	X			
g) 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	X			



delineation map?				
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	X			
i) 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?	X			
j) Inundation by seiche, tsunami, or mudflow?				X

a-f. Drainage patterns may be altered as a result of future development associated with projects and future land use patterns envisioned by the RTP-SCS. The RTP-SCS may introduce impervious surfaces in undeveloped areas, which could result in increased surface runoff that has the potential to affect surface water quantities, result in changes to absorption rates, discharge degraded surface water quality, affect the capacity of existing or planned drainage systems, and/or create erosion. Landscaping and other project features may decrease groundwater supplies. The EIR will analyze these potential impacts.

g-i. The potential exists for future development in accordance with the RTP-SCS to expose people or structures to flooding, and for projects included in the RTP-SCS to impede or redirect flood flows. The EIR will analyze these impacts.

j. Kings County is not subject to inundation by seiche, tsunami, or mudflow. No impacts would result.

<b>X. LAND USE AND PLANNING – Would the project:</b>	<b>Impact to be Addressed in the EIR</b>	<b>Less Than Significant With Mitigation Incorporation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) Physically divide an established community?	X			
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?	X			
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	X			

a-c. Linear transportation projects have the potential to physically divide existing communities. The RTP-SCS project list is adapted from the Circulation Elements of applicable General Plans and regional plans, and is generally expected to be consistent with these plans. Similarly, the land use patterns envisioned by the RTP-SCS are adapted from the Land Use Elements of applicable General Plans and regional plans. However, projects and land use patterns envisioned in the RTP-SCS may lead to land use conflicts that require analysis in the EIR. This includes analysis related to the loss or conversion of any agricultural land (as discussed above in Section II, *Agriculture and Forestry Resources*). An HCP for the PG&E San Joaquin Valley operations covers all of Kings County. The EIR will evaluate the anticipated impacts to land use and planning.



<b>XI. MINERAL RESOURCES –</b> <i>Would the project:</i>	<b>Impact to be Addressed in the EIR</b>	<b>Less Than Significant With Mitigation Incorporation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?			X	
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?			X	

a-b. The California Geological Survey (CGS) Division of Mines and Geology provides objective economic-geologic expertise to assist in the protection and development of mineral resources through the land-use planning process, as mandated by the Surface Mining and Reclamation Act of 1975 (SMARA). According to their *Publication of the SMARA Mineral Land Classification Project Dealing with Mineral Resources in California* (March 2013), Kings County is listed under “counties within which no SMARA classification has occurred.” In addition, according to the Kings County General Plan Resource Conservation Element (2008), few commercial mining and mineral extraction activities occur in Kings County. Currently, only limited excavation of soil, sand and some gravel is excavated for commercial use. Therefore, transportation projects and future land use patterns envisioned by the RTP-SCS would not result in the loss of availability of a known mineral resource or result in the loss of availability of a locally important mineral resource recovery site. Impacts to mineral resources would be less than significant.

<b>XII. NOISE -</b> <i>Would the project result in:</i>	<b>Impact to be Addressed in the EIR</b>	<b>Less Than Significant With Mitigation Incorporation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	X			
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	X			
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	X			
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	X			
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	X			
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	X			

a-f. The RTP-SCS contains policies that would minimize noise impacts within the County. However, implementation of the transportation projects and future land use patterns envisioned by the RTP-SCS have the potential to increase noise generating uses and vehicular traffic in addition to possibly locating noise generating uses near noise sensitive land uses.



Short-term increases could arise from project construction, while long-term increases may be associated with changes in traffic patterns. The EIR will evaluate these issues. In addition, the EIR will analyze the compatibility of future land uses including land uses in the vicinity of airstrips.

<b>XIII. POPULATION AND HOUSING --</b> <i>Would the project:</i>	<b>Impact to be Addressed in the EIR</b>	<b>Less Than Significant With Mitigation Incorporation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<b>X</b>			
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<b>X</b>			
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<b>X</b>			

a-c. Transportation projects and future land use patterns envisioned by the RTP-SCS may induce indirect population growth in an area by improving access. Additionally, improvements in the RTP-SCS may have the potential to result in the displacement of residences in the event that right-of-way acquisition is required. These issues will be discussed in the EIR.

<b>XIV. PUBLIC SERVICES -</b> <i>Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:</i>	<b>Impact to be Addressed in the EIR</b>	<b>Less Than Significant With Mitigation Incorporation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) Fire protection?	<b>X</b>			
b) Police protection?	<b>X</b>			
c) Schools?	<b>X</b>			
d) Parks?	<b>X</b>			
e) Other public facilities?	<b>X</b>			

a - e. The RTP-SCS may affect fire and police protection services, schools, parks and other public facilities. An increase in service demand may also increase maintenance costs of public facilities, including roads and result in a need for additional municipal services including administration, planning, and public works. The EIR will evaluate these potential public services impacts.





<b>XV. RECREATION -</b>	<b>Impact to be Addressed in the EIR</b>	<b>Less Than Significant With Mitigation Incorporation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	X			
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	X			

a-b. As discussed above under *Public Services*, the RTP-SCS may affect parks and other public facilities. An increase in service demand may also increase maintenance costs of parks or other recreational facilities, and result in a need for additional municipal services including administration, planning, and public works. The EIR will evaluate these potential impacts to recreational facilities.

<b>XVI. TRANSPORTATION/TRAFFIC - Would the project:</b>	<b>Impact to be Addressed in the EIR</b>	<b>Less Than Significant With Mitigation Incorporation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) Conflict with an applicable plan, ordinance or policy establishing a measure of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways, and freeways, pedestrian and bicycle paths, and mass transit?	X			
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?	X			
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	X			
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment)?	X			
e) Result in inadequate emergency access?	X			
f) Conflict with adopted policies, plans, or programs regarding public transit, bikeways, or pedestrian facilities, or otherwise substantially decrease the performance or safety of such facilities?	X			

a-f. Transportation projects and future land use patterns envisioned by the RTP-SCS may result in increased volumes of traffic on certain roads, and/or alter existing traffic patterns. Either individually or cumulatively, these projects have the potential to exceed a level of service standard for designated roads or highways which may conflict with an applicable plan, ordinance, policy or congestion management program. Transportation projects and future land



use patterns envisioned by the RTP-SCS would also have the potential to result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in safety risks. The implementation of individual projects listed in the RTP-SCS may result in an increase in hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). These projects would also have the potential to result in inadequate emergency access, as well as conflict with adopted policies, plans, or programs supporting alternative transportation. These issues will be discussed in the EIR.

<b>XVII. UTILITIES AND SERVICE SYSTEMS</b> -Would the project:	<b>Impact to be Addressed in the EIR</b>	<b>Less Than Significant With Mitigation Incorporation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	X			
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	X			
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	X			
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	X			
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	X			
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	X			
g). Comply with federal, state, and local statutes and regulations related to solid waste?	X			

a-g. All utility services within the four incorporated communities are provided by either a community service district or a public utility district. Projects listed in and land uses envisioned by the RTP-SCS may require water and wastewater service. The RTP-SCS may include projects that would result in new or modified storm water drainage facilities, which could cause a significant effect. Transportation projects in and future land use patterns established by the local agency's general plans and envisioned by the RTP-SCS may create solid waste that would require disposal in local landfills and other regional waste facilities. These issues will be discussed in the EIR.



<b>XVIII. MANDATORY FINDINGS OF SIGNIFICANCE</b>	<b>Impact to be Addressed in the EIR</b>	<b>Less Than Significant With Mitigation Incorporation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<b>X</b>			
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<b>X</b>			
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<b>X</b>			

a-c. The RTP-SCS is a guide for the development of transportation improvements and forecasts land use patterns within the plan area consistent with the existing local General Plan policies and land use designations as specified by the local agencies and includes policies that would reduce or prevent impacts to the environment. Nevertheless, the RTP-SCS may generate impacts in the following areas: Aesthetics, Agricultural Resources, Air Quality, Biological Resources, Cultural Resources, Geology and Soils, Hazards and Hazardous Materials, Hydrology and Water Quality, Land Use and Planning, Noise, Population and Housing, Public Services, Recreation, Transportation and Traffic, and/or Utilities. These issue areas as well as cumulative impacts will be evaluated in the EIR, and any feasible mitigation measures will be identified to avoid and/or reduce any significant impacts.



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EDMUND G. BROWN JR., Governor  
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November 18, 2013

Bruce Abanathie  
Regional Planner  
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SUBJECT: NOTICE OF PREPARATION  
2014 REGIONAL TRANSPORTATION PLAN AND SUSTAINABLE  
COMMUNITIES STRATEGY  
SCH#: 2013011058

Dear Mr. Abanathie:

The California Department of Fish and Wildlife (Department) has reviewed the Notice of Preparation for the 2014 Regional Transportation Plan and Sustainable Communities Strategy (Project), or RTP-SCS, submitted by the Kings County Association of Governments (KCAG). The Project is the long-range planning, policy, action, and financial document for the Kings County Region. The RTP-SCS adopts policies, sets goals, and identifies financial resources to encourage and promote the safe and efficient management, operation, and development of a regional intermodal transportation system that would serve the mobility needs of goods and people. KCAG is required to prepare a Sustainable Communities Strategy that demonstrates how greenhouse gas reduction targets will be met through integrated land use, housing, and transportational planning. The KCAG does not propose any land use changes, but rather the land use patterns envisioned by the RTP-SCS are based on the General Plan land use and zoning designations of the local agencies. The RTP-SCS would be consistent with the land use and zoning designations in the incorporated and unincorporated areas. The Project location includes all of Kings County's 1,391 square miles.

The Project appears to serve as an umbrella for future developmental projects related with the intermodal transportation system. The Department is concerned with the potential impacts to nesting birds, the State threatened Swainson's hawk (*Buteo swainsoni*), the State threatened and federally endangered San Joaquin kit fox (*Vulpes macrotis mutica*), the State and federally endangered and fully protected blunt-nosed leopard lizard (*Gambelia sila*), the State and federally endangered Tipton kangaroo rat (*Dipodomys nitratooides nitratooides*), the State and federally endangered giant kangaroo rat (*Dipodomys ingens*), and the Species of Special Concern burrowing owl (*Athene cunicularia*), American badger (*Taxidea taxus*), and western pond turtle (*Actinemys marmorata*). It is important to note that due to the county-wide Project location, the

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Department recommends focused biological surveys be conducted by a qualified wildlife biologist during the appropriate survey period(s) and prior to any Project-related activities to determine if the above special status species are present and if they could be impacted. Survey results can then be used to identify any mitigation, minimization, and avoidance measures necessary to reduce potential impacts to special status biological resources to less than significant. The Department advises these be included as enforceable measures in the Environmental Impact Report (EIR) prepared for this Project, as well as to any future tiered project, so as to inform any potential permitting needs. Our comments follow.

### **Department Jurisdiction**

**Trustee Agency Authority:** The Department is a Trustee Agency with responsibility under California Environmental Quality Act for commenting on projects that could impact plant and wildlife resources. Pursuant to Fish and Game Code Section 1802, the Department has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and the habitat necessary for biologically sustainable populations of those species. As a Trustee Agency for fish and wildlife resources, the Department is responsible for providing, as available, biological expertise to review and comment upon environmental documents and impacts arising from project activities, as those terms are used under California Environmental Quality Act (CEQA) (Division 13 [commencing with Section 21000] of the Public Resources Code).

**Responsible Agency Authority:** The Department has regulatory authority over projects that could result in the "take" of any species listed by the State as threatened or endangered, pursuant to Fish and Game Code Section 2081. If the Project could result in the "take" of any species listed as threatened or endangered under the California Endangered Species Act (CESA), the Department may need to issue an Incidental Take Permit (ITP) for the Project. CEQA requires a Mandatory Finding of Significance if a project is likely to substantially impact threatened or endangered species (Sections 21001{c}, 21083, Guidelines Sections 15380, 15064, 15065). Impacts must be avoided or mitigated to less than significant levels unless the CEQA Lead Agency makes and supports Findings of Overriding Consideration (FOC). The CEQA Lead Agency's FOC does not eliminate the Project proponent's obligation to comply with Fish and Game Code Section 2080.

The Department also has regulatory authority with regard to activities occurring in streams and/or lakes that could adversely affect any fish or wildlife resource, pursuant to Fish and Game Code sections 1600 *et seq.* If any Project-related activities will involve work along the banks of any water body or waterway (i.e. Kings River, Cross Creek, surfacewater conveyance structures, etc.), the Department recommends the submission of a Streambed Alteration Agreement (SAA). The Department is required to comply with CEQA in the issuance or the renewal of an SAA. For additional information

on notification requirements, please contact our staff in the Stream Alteration Program at (559) 243-4593.

**Bird Protection:** The Department has jurisdiction over actions which may result in the disturbance or destruction of active nest sites or the unauthorized "take" of birds. Fish and Game Code sections that protect birds, their eggs and nests include, sections 3503 (regarding unlawful "take," possession or needless destruction of the nest or eggs of any bird), 3503.5 (regarding the "take," possession or destruction of any birds-of-prey or their nests or eggs), and 3513 (regarding unlawful "take" of any migratory nongame bird).

**Fully Protected Species:** The Department has jurisdiction over fully protected species of birds, mammals, amphibians and reptiles, and fish, pursuant to Fish and Game Code sections 3511, 4700, 5050, and 5515. "Take" of any fully protected species is prohibited and the Department cannot authorize their "take." In addition to having special status under State law, the fully protected blunt-nosed leopard lizard (*Gambelia sila*) has the potential to occur in the saltbush and non-native grassland habitat within the Project area.

**Water Pollution:** Pursuant to Fish and Game Code Section 5650, it is unlawful to deposit in, permit to pass into, or place where it can pass into "Waters of the State" any substance or material deleterious to fish, plant life, or bird life, including non-native species. It is possible that without mitigation measures this Project could result in pollution of a "Waters of the State" from storm water runoff or construction related erosion into the water bodies and/or waterways within Kings County. This could impact the wildlife resources that utilize these watercourses by causing: increased sediment input from road or structure runoff; toxic runoff associated with Project-related activities and implementation; and/or and impairment of wildlife movement along riparian corridors. The Regional Water Quality Control Board and U.S. Army Corps of Engineers also has jurisdiction regarding discharge and pollution to "Waters of the State."

### **Potential Project Impacts and Recommendations**

**Riparian Habitat and Wetlands:** Riparian habitat and wetlands are of extreme importance to a wide variety of plant and wildlife species. Riparian habitat and wetlands are known to exist within the proposed Project area. The Department considers projects that impact these resources as significant if they result in a net loss of acreage or habitat value. The Department has a no-net-loss policy regarding impacts to wetlands. When wetland habitat cannot be avoided, impacts to wetlands should be compensated for with the creation of new habitat, preferably on-site, on a minimum of an acre-for-acre basis. Potential impacts to special status resources posed by wetland creation should also be considered. Wetlands that have been inadvertently created by



leaks, dams or other structures, or failures in man-made water systems are not exempt from this policy.

The Department provides the following recommendations: a minimum 200-foot no-disturbance buffer be delineated from the high water mark of a water body or waterway, or from the outside edge of the riparian vegetation whichever is greater, is recommended for areas with riparian vegetation; a minimum 100-foot no-disturbance buffer around the high water mark of a water body or waterway that has no riparian vegetation. Larger buffers may be warranted to avoid impacts.

For all tiered projects that could impact riparian and/or wetlands resources, a formal wetland delineation is advised to be conducted by a qualified biologist to determine the location and extent of wetland habitat on site, including riparian habitat. Please note that, while there is overlap, the state and federal definitions of wetlands differ; delineation should identify both state and federal wetlands on the project site. Fish & Game Code Section 2785 (g) defines wetlands; further Section 1600 applies to any area within the bed, channel, or bank of any river, stream, or lake. It is important to note that while accurate delineations by qualified individuals have resulted in a quicker review and response from the US Army Corps of Engineers (ACOE) and the Department, substandard or inaccurate delineations have resulted in unnecessary time delays for applicants due to insufficient, incomplete, or conflicting data. Wetlands should also be designated on a site map and included in the final environmental documents and the size of the buffers should be clearly delineated both on the map and in the text of the mitigation measures.

**Nesting Birds:** The trees, shrubs, and grasses within and in the vicinity of the Project area likely provide nesting habitat for songbirds and raptors. The Department encourages Project implementation to occur during the non-nesting bird season. However, if ground-disturbing activities must occur during the breeding season (February through mid-September), the Project applicant is responsible for ensuring that implementation of the Project does not result in any violation of the Migratory Bird Treaty Act or relevant Fish and Game Codes as referenced above. Prior to work commencing, the Department recommends surveys for active nests be conducted by a qualified wildlife biologist no more than 10 days prior to the start of the Project and that the surveys be conducted in a sufficient area around the work site to identify any nests that are present and to determine their status. A sufficient area means any nest within an area that could potentially be affected by the Project. In addition to direct impacts, such as nest destruction, nests might be affected by noise, vibration, odors, and movement of workers or equipment. Identified nests should be continuously surveyed for the first 24 hours prior to any construction related activities to establish a behavioral baseline. Once work commences, all nests should be continuously monitored to detect any behavioral changes as a result of the Project. If behavioral changes are observed, the work causing that change should cease and the Department consulted for additional avoidance and minimization measures.

If continuous monitoring of identified nests by a qualified wildlife biologist is not feasible, the Department also recommends a minimum no-disturbance buffer of 250 feet around active nests of non-listed bird species and a 500-foot no-disturbance buffer around the nests of unlisted raptors until the breeding season has ended, or until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival. Variance from these no disturbance buffers may be implemented when there is compelling biological or ecological reason to do so, such as when the Project area would be concealed from a nest site by topography. Any variance from these buffers is advised to be supported by a qualified wildlife biologist and it is recommended the Department be notified in advance of implementation of a no disturbance buffer variance.

**Blunt-nosed Leopard Lizard (BNLL):** Known occurrence records document BNLL within Kings County. Because BNLL is fully protected and, therefore, no "take" incidental or otherwise can be authorized by Department protocol level surveys should be conducted prior to any ground disturbing activities in all areas of suitable habitat following the Department's protocol-level survey methods described in the "Approved Survey Methodology for the Blunt-nosed Leopard Lizard" (DFG, 2004). Suitable BNLL habitat includes all areas of grassland and shrub scrub habitat that contains required habitat elements, such as small mammal burrows. BNLL are also known to utilize open space patches between suitable habitats including disturbed sites and unpaved access roadways. These surveys, the parameters of which were designed to optimize detectability, must be conducted to reasonably assure the Department that "take" of this fully protected species will not occur as a result of Project implementation. The Department advises that BNLL surveys be completed no more than one year prior to initiation of the project if construction activities will impact potential habitat. In the event that this species is detected during protocol-level surveys, consultation with the Department is warranted to discuss how to implement the project and avoid "take". It is important to note that protocol-level surveys must be conducted on multiple dates during late spring, summer, and fall and that within these time periods there are specific date, temperature, and time parameters which must be adhered to; as a result, protocol-level surveys for this species are not synonymous with 30-day "pre-construction" surveys often recommended for other wildlife species. Avoidance measures for BNLL are advised to be fully addressed in the EIR prepared for the Project and to be included as enforceable mitigation in the finalized CEQA document prepared for this Project.

**San Joaquin Kit Fox (SJKF):** SJKF are known to occur within Kings County. SJKF are known to den in right-of-ways, vacant lots, etc., and populations can fluctuate over the years. Presence/absence in any one year does not necessarily depict the potential for SJKF to occur on a site. It is important to note that SJKF may be attracted to Project area due to the type and level of ground-disturbing activities (i.e. trenching, horizontal directional drilling, etc.) and the loose, friable soils that are created as a result of intensive ground disturbance. Because SJKF are known to be present, the Department

advises that the United States Fish and Wildlife Service (USFWS) "Standardized recommendations for protection of the San Joaquin kit fox prior to or during ground disturbance" (2011) be followed in all areas of potentially suitable habitat prior to any ground-disturbing activities occurring within the project site. In the event that this species is detected during surveys, consultation with the Department is warranted to discuss how to implement the Project and avoid "take," or if avoidance is not feasible, to acquire a State Incidental Take Permit prior to any ground-disturbing activities. Avoidance, minimization, and mitigation measures for SJKF are advised to be fully addressed in the EIR and to be included as enforceable mitigation in the finalized CEQA document prepared for this Project.

**Listed Rodent Species:** A known population of TKR exists at the Lemoore Naval Air Station and the species could occur in all areas of potentially suitable habitat south of this extant population. In order to determine if TKR currently occupy potential habitat within or adjacent to the Project site, focused protocol-level trapping surveys would need to be conducted by a qualified wildlife biologist that is permitted to do so by both the Department and United States Fish and Wildlife Service (USFWS). These surveys must be conducted well in advance of ground-disturbing activities in order to determine if impacts to TKR could occur. Further, the Department recommends a minimum 50-foot no-disturbance buffer be employed around all burrows that could be used by this species to implement full avoidance. The presence of biological monitors is also recommended during all ground disturbance and other construction-related activities to ensure that "take" of above-ground and below-ground TKR does not occur. If full avoidance is not feasible and "take" could occur as a result of project implementation, acquisition of an ITP, pursuant to Fish and Game Code Section 2081(b), would be warranted prior to initiating ground-disturbing activities. These recommended avoidance, minimization, and mitigation measures are advised to be included as enforceable conditions in the EIR prepared for this Project.

**Swainson's Hawk (SWHA):** This State threatened species has the potential to nest in trees adjacent to the Project site. To evaluate potential Project-related impacts, the Department recommends that a qualified wildlife biologist conduct surveys for nesting raptors following the survey methodology developed by the Swainson's Hawk Technical Advisory Committee (SWHA TAC, 2000) prior to Project implementation.

If ground-disturbing Project activities are to take place during the normal bird breeding season (February 1 through September 15), the Department recommends that additional pre-construction surveys for active nests be conducted by a qualified biologist no more than 10 days prior to the start of construction. A minimum no-disturbance buffer of 0.5 miles is advised and be delineated around active nests until the breeding season has ended or until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival.

In addition, the removal of mature trees is a potentially significant impact to nesting raptors that is recommended to be mitigated. The Department considers removal of known raptor nest trees, even outside of the nesting season, to be a significant impact under CEQA, and, in the case of Swainson's hawk, it could also result in "take" under CESA. This is especially true with species such as Swainson's hawk that exhibit high site fidelity to their nest and nest trees year after year. Regardless of nesting status, trees that must be removed are advised to be replaced with an appropriate native tree species planting at a ratio of 3:1 in an area that will be protected in perpetuity. This mitigation is needed to offset potential impacts to the loss of potential nesting habitat.

**Burrowing Owl:** Burrowing owl are known to occur in Kings County. If any ground-disturbing activities will occur during the burrowing owl nesting season (approximately April 1 through August 15), implementation of avoidance measures is required. In the event that burrowing owls are found, the Department's Staff Report on Burrowing Owl Mitigation (CDFG 2012) recommends that impacts to occupied burrows be avoided in accordance with the following table unless a qualified biologist approved by the Department verifies through non-invasive methods that either: 1) the birds have not begun egg laying and incubation; or 2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival.

Location	Time of Year	Level of Disturbance		
		Low	Med	High
Nesting sites	April 1-Aug 15	200 m*	500 m	500 m
Nesting sites	Aug 16-Oct 15	200 m	200 m	500 m
Nesting sites	Oct 16-Mar 31	50 m	100 m	500 m

\* meters (m)

Failure to implement this buffer zone could cause adult burrowing owls to abandon the nest, cause eggs or young to be directly impacted (crushed), and/or result in reproductive failure, in violation of Fish and Game Code and the Migratory Bird Treaty Act.

**Federally Listed Species:** The Department also recommends consulting with the USFWS on potential impacts to federally listed species. "Take" under the Federal Endangered Species Act (FESA) is more broadly defined than CESA; "take" under FESA also includes significant habitat modification or degradation that could result in death or injury to a listed species by interfering with essential behavioral patterns such as breeding, foraging, or nesting. Consultation with the USFWS in order to comply with FESA is advised well in advance of any ground disturbing activities.


More information on survey and monitoring protocols for sensitive species can be found at the Department's website ([www.dfg.ca.gov/wildlife/nongame/survey\\_monitor.html](http://www.dfg.ca.gov/wildlife/nongame/survey_monitor.html)). If you have any questions on these issues, please contact Jim Vang, Environmental

Bruce Abanathie, Regional Planner  
Kings County Association of Governments  
November 18, 2013

Page 8

Scientist, at the address provided on this letterhead, by telephone at (559) 243-4014, extension 254, or by electronic mail at [Jim.Vang@wildlife.ca.gov](mailto:Jim.Vang@wildlife.ca.gov).

Sincerely,



Jeffrey R. Single, Ph.D.  
Regional Manager

cc: Thomas Leeman  
United States Fish and Wildlife Service  
2800 Cottage Way, Suite W-2605  
Sacramento, California 95825

Regional Water Quality Control Board  
Central Valley Region  
1685 E Street  
Fresno, California 93706-2020

United State Army Corps of Engineers  
1325 "J" Street, Suite #1350  
Sacramento, California 95814-2928

### Literature Cited

CDFG, 1994. Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (*Buteo Swainsoni*) in the Central Valley of California. California Department of Fish and Game.

CDFG, 2004. Approved Survey Methodology for the Blunt-nosed Leopard Lizard. California Department of Fish and Game, May 2004.

CDFG, 2012. Staff Report on Burrowing Owl Mitigation. California Department of Fish and Game.

SWHA TAC, 2000. Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley. Swainson's Hawk Technical Advisory Committee, May 31, 2000.

USFWS, 2011. Standard Recommendations for the Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance. United States Fish and Wildlife Service.



REPLY TO  
ATTENTION OF

DEPARTMENT OF THE ARMY  
U.S. ARMY ENGINEER DISTRICT, SACRAMENTO  
CORPS OF ENGINEERS  
1325 J STREET  
SACRAMENTO CA 95814-2922

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X O A C

November 14, 2013

Regulatory Division SPK-2013-01039

Bruce Abanathie  
Kings County Association of Governments  
339 West "D" Street  
Lemoore, California 93245

Dear Mr. Abanathie:

We are responding to your October 22, 2013 request for comments on the Kings County Association of Governments 2014 Regional Transportation Plan and Sustainable Communities Strategy project. The project is located in Section 28, Township 21 South, Range 20 East, Mount Diablo Meridian, Latitude 36.075126°, Longitude -119.815911°, Entirety of Kings County, California. Your identification number is SPK-2013-01039.

The Corps of Engineers' jurisdiction within the study area is under the authority of Section 404 of the Clean Water Act for the discharge of dredged or fill material into waters of the United States. Waters of the United States include, but are not limited to, rivers, perennial or intermittent streams, lakes, ponds, wetlands, vernal pools, marshes, wet meadows, and seeps. Project features that result in the discharge of dredged or fill material into waters of the United States will require Department of the Army authorization prior to starting work.

To ascertain the extent of waters associated with the proposed work, you should prepare a wetland delineation(s), in accordance with the "Minimum Standards for Acceptance of Preliminary Wetlands Delineations", under "Jurisdiction" on our website at the address below, and submit it to this office for verification. A list of consultants that prepare wetland delineations and permit application documents is also available on our website at the same location.

The range of alternatives considered should include alternatives that avoid impacts to wetlands or other waters of the United States. Every effort should be made to avoid project features which require the discharge of dredged or fill material into waters of the United States. In the event it can be clearly demonstrated there are no practicable alternatives to filling waters of the United States, mitigation plans should be developed to compensate for the unavoidable losses resulting from implementation.

Please refer to identification number SPK-2013-01039 in any correspondence concerning this project. If you have any questions, please contact Stephen Willis at 1325 J Street, Room 1350, Sacramento, California 95814-2922, by email at [Stephen.M.Willis2@usace.army.mil](mailto:Stephen.M.Willis2@usace.army.mil), or by telephone at 916-557-7355. For more information regarding our program, please visit our website at [www.spk.usace.army.mil/Missions/Regulatory.aspx](http://www.spk.usace.army.mil/Missions/Regulatory.aspx).

Sincerely,

A handwritten signature in blue ink, appearing to read "Kathleen A. Dadey".

Kathleen A. Dadey, Ph.D  
Chief, California South Branch





# Comment Sheet

Please let us know your concerns, so we can address them in the EIR.

**Name:** RICK TELEGAN

**Affiliation:** REAL PROPERTY INVESTOR  
*(resident, businessperson, community group member)*

**Address:** 5 RIVER PARK PLACE EAST,  
# 102 FRESNO, CA 93720

**Phone:** 559.434.0334

**Email:** fresno3rdm@aol.com

**Comment/Question:**

**RE :** KCAG 2014 REGIONAL TRANSPORTATION PLAN

The PLAN must correlate accurately with all of the following:

1) All General Plans, including respective Land Use  
Diagrams, for every city within Kings County,

2) All current Transportation Reports (Caltrans) for  
SR 33, SR 41, SR 43, SR 198 and SR 269, together  
with SR <sup>198</sup> Corridor System Management Plan (February,  
2012), and

3) All State and/or Federal major transportation projects  
planned that could have impacts to Kings County.

( The items listed need to be added to the "REFERENCES".)

Please submit to Bruce Abanathie, Regional Planner  
Kings County Association of Governments  
339 W. D Street, Suite B  
Lemoore, CA 93245  
[Bruce.Abanathie@co.kings.ca.us](mailto:Bruce.Abanathie@co.kings.ca.us)

## **Appendix B**

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### *Mitigation Monitoring and Reporting Program (MMRP)*



## MITIGATION MONITORING AND REPORTING PROGRAM

CEQA requires that a reporting or monitoring program be adopted for the conditions of project approval that are necessary to mitigate or avoid significant effects on the environment. The mitigation monitoring and reporting program is designed to ensure compliance with adopted mitigation measures during project implementation. For each mitigation measure recommended in the Final Environmental Impact Report, specifications are made herein that identify the action required and the monitoring that must occur. In addition, a responsible agency is identified for verifying compliance with individual conditions of approval contained in the Mitigation Monitoring and Reporting Program (MMRP).

Agencies considering approval of future projects under the 2014 RTP-SCS would utilize the EIR as a basis in determining potential mitigation measures for subsequent activities. The agencies responsible for implementing the mitigation measures, described as “project sponsors” in the EIR, will be the lead agency for the individual future projects under the 2014 RTP-SCS. The project sponsor for individual projects will involve one of the following agencies: California Department of Transportation (Caltrans), California Public Utilities Commission’s Rail Crossings Engineering Section (RCES), Cities of Avenal, Corcoran, Hanford, and Lemoore, and the County of Kings. The project sponsor, which will be the lead agency for individual future projects under the 2014 RTP-SCS, will be responsible to monitor mitigation measures that are required to be implemented for the project.



Mitigation Measure	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
<b>AESTHETICS</b>							
<b>AES-2(a)</b> Roadway extensions and widenings shall avoid the removal of existing mature trees to the extent possible. The loss of trees that are protected by local agencies shall be replaced at a minimum 2:1 basis and incorporated into the landscaping design for the roadway. The project sponsor of a particular 2014 RTP-SCS transportation project shall ensure the continued vitality of replaced trees through periodic maintenance (see mitigation measures prescribed in Section 4.3 Biological Resources, Impact B-1).	Development plans shall avoid the removal of existing mature trees to the extent possible; replace lost trees at a minimum 2:1 ratio; periodic maintenance shall occur to ensure vitality of replaced trees.	During individual environmental review for roadway extensions and widening	Once during plan review; periodically during construction	Project sponsor			
<b>AES-2(b)</b> Roadway lighting shall be minimized to the extent possible, and shall not exceed the minimum height requirements of the local jurisdiction in which the project is proposed. This may be accomplished through the use of hoods, low intensity lighting, and using as few lights as necessary to achieve the goals of the project.	Development plans shall minimize lighting and not exceed local minimum height requirements.	During individual design review	Once	Project sponsor			
<b>AES-2(c)</b> The project sponsor shall ensure that landscaping is installed to restore natural features along corridors after widening, interchange modifications, realignment, or construction of ancillary facilities. Associated landscape materials and design shall enhance landform variation, provide erosion control, and blend with the natural setting. To ensure compliance with approved landscape plans, the implementing agency shall provide a performance security equal to the value of the landscaping/ irrigation installation.	Place conditions of approval on the project to ensure that associated landscape materials enhance landform variation, provide erosion control and blend with the natural setting; provide a performance security equal to the value of the landscaping/ irrigation installation.	During individual environmental review	Once	Project sponsor			



2014 RTP-SCS PEIR  
**Mitigation Monitoring and Reporting Program**

Mitigation Measure	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
<b>AES-2(d)</b> Where use of sound walls is found to be necessary to reduce potential noise impacts arising from increased traffic volumes, walls shall incorporate offsets, accents, and landscaping to prevent monotony. In addition, sound walls should be complementary in color and texture to surrounding natural features.	Place conditions of approval on the project to ensure that sound walls incorporate offsets, accents, and landscaping to prevent monotony and complement the color and texture of surrounding natural features.	During individual environmental review	Once	Project sponsor			
<b>AES-2(e)</b> Where a particular 2014 RTP-SCS transportation improvement project affects adjacent landforms, the project sponsor shall ensure that recontouring provides a smooth and gradual transition between modified landforms and existing grade.	Development plans shall include recontouring to provide a smooth and gradual transition between modified landforms and existing grade.	During individual environmental review	Once	Project sponsor			
<b>AIR QUALITY</b>							
<b>AQ-1(a)</b> The project sponsor shall ensure that SJVAPCD Regulation VIII control measures (listed in Table 6-2 of the GAMAQI) are implemented. The measures shall be noted on all construction plans and the project sponsor shall perform periodic site inspections. SJVAPCD Regulation VIII control measures include the following: <ul style="list-style-type: none"> <li>All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover or vegetative ground cover.</li> <li>All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.</li> </ul>	Construction plans shall show San Joaquin Valley APCD's standard control measures; project sponsor shall ensure implementation.	Prior to issuance of grading permits; periodically during construction	Once during plan review; periodically during construction	Project sponsor and on-site construction manager			



2014 RTP-SCS PEIR  
**Mitigation Monitoring and Reporting Program**

Mitigation Measure	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
<ul style="list-style-type: none"> <li>• All land clearing, grubbing, scraping, excavation, land leveling, grading, cut &amp; fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking.</li> <li>• With the demolition of buildings up to six stories in height, all exterior surfaces of the building shall be wetted during demolition.</li> <li>• When materials are transported off-site, all material shall be covered, or effectively wetted to limit visible dust emissions, and at least six inches of freeboard space from the top of the container shall be maintained.</li> <li>• All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. (The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions.) (Use of blower devices is expressly forbidden.)</li> <li>• Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.</li> <li>• Within urban areas, trackout shall be immediately removed when it extends 50 or more feet from the site and at the end of each workday.</li> <li>• Any site with 150 or more vehicle trips per day shall prevent carryout and trackout.</li> </ul>							



2014 RTP-SCS PEIR  
**Mitigation Monitoring and Reporting Program**

Mitigation Measure	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
<p><b>AQ-1(b)</b> The project sponsor shall ensure that SJVAPCD enhanced control measures (listed in Table 6-3 of the GAMAQI) are implemented. The measures shall be noted on all construction plans and the project sponsor shall perform periodic site inspections. SJVAPCD enhanced control measures include the following:</p> <ul style="list-style-type: none"> <li>• Limit traffic speeds on unpaved roads to 15 mph.</li> <li>• Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.</li> </ul>	Construction plans shall show San Joaquin Valley APCD's standard control measures; project sponsor shall ensure implementation.	Prior to issuance of grading permits; periodically during construction	Once during plan review; periodically during construction	Project sponsor; on-site construction manager			
<p><b>AQ-1(c)</b> The project sponsor shall ensure that SJVAPCD additional control measures (listed in Table 6-3 of the GAMAQI) are implemented. The measures shall be noted on all construction plans and the project sponsor shall perform periodic site inspections. SJVAPCD additional control measures include the following:</p> <ul style="list-style-type: none"> <li>• Install wheel washers for all exiting trucks, or wash off all trucks and equipment leaving the site.</li> <li>• Install wind breaks at windward side(s) of construction areas.</li> <li>• Suspend excavation and grading activity when winds exceed 20 mph.</li> <li>• Limit area subject to excavation, grading, and other construction activity at any one time</li> </ul>	Construction plans shall show San Joaquin Valley APCD's standard control measures; project sponsor shall ensure implementation.	Prior to issuance of grading permits; periodically during construction	Once during plan review; periodically during construction	Project sponsor; on-site construction manager			
<p><b>AQ-1(d)</b> The project sponsor shall incorporate the following SJVAPCD heavy duty construction equipment mitigation measures (listed in Table 6-4 of the GAMAQI) to the maximum extent feasible:</p> <ul style="list-style-type: none"> <li>• Use alternative fueled or catalyst equipped diesel construction</li> </ul>	Construction plans shall show San Joaquin Valley APCD's heavy duty construction mitigation measures; project sponsor shall ensure implementation.	Prior to issuance of grading permits; periodically during construction	Once during plan review; periodically during construction	Project sponsor; on-site construction manager			



2014 RTP-SCS PEIR  
**Mitigation Monitoring and Reporting Program**

Mitigation Measure	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
<p>equipment.</p> <ul style="list-style-type: none"> <li>Minimize idling time.</li> <li>Limit the hours of operation of heavy duty equipment and/or the amount of equipment in use.</li> <li>Replace fossil-fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set).</li> <li>Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing of construction activity during the peak-hour of vehicular traffic on adjacent roadways.</li> <li>Implement activity management (e.g. rescheduling activities to reduce short-term impacts).</li> </ul>							
<p><b>AQ-3(a)</b> The transportation project sponsor shall retain a qualified air quality consultant to prepare a health risk assessment in accordance with the California Air Resources Board and the Office of Environmental Health and Hazard Assessment requirements to determine the exposure of nearby residents/occupants/users to stationary air quality pollutants to a transportation project. The health risk assessment shall be submitted to the Lead Agency for review and approval. The sponsor shall implement the approved health risk assessment recommendations to any nearby sensitive receptor structures/buildings, if any. Such measures may include:</p> <ul style="list-style-type: none"> <li>Install, operate and maintain in good working order a central heating and ventilation system or other air take system in the building of a sensitive receptor that would be impacted by the project, or in each individual residential unit, that meets the efficiency standard</li> </ul>	<p>Project sponsor shall incorporate measures based on analysis of individual sites and project circumstances.</p>	<p>During individual environmental review</p>	<p>Once</p>	<p>Project sponsor</p>			





Mitigation Measure	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
<p>of the minimum efficiency reporting value 13. The heating and ventilation 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 high efficiency particulate absorption filters or American Society of Heating, Refrigeration, and Air-Conditioning Engineers 85% supply filters should be used.</p> <ul style="list-style-type: none"> <li>• Ensure that positive pressure occurs within the building.</li> <li>• Achieve a performance standard of at least one air exchange per hour of fresh outside filtered air.</li> <li>• Achieve a performance standard of at least 4 air exchanges per hour of recirculation.</li> <li>• Achieve a performance standard of 0.25 air exchanges per hour of in unfiltered infiltration if the building is not positively pressurized.</li> </ul>							
<b>BIOLOGICAL RESOURCES</b>							
<p><b>B-1(a) Biological Resources Screening and Assessment.</b> Because of the programmatic nature of the 2014 RTP-SCS and specific impacts for a given project are unknown at this time, on a project-by-project basis upon completion of final design, a preliminary biological resource screening shall be performed as part of the environmental review process to determine whether the project has any potential to impact biological resources. If it is determined that the project has no potential to impact biological resources, no further action is required. If the project would have the potential to impact biological resources,</p>	<p>Projects shall conduct a preliminary biological resource screening; if determined the project has potential to impact biological resources, a biological resources assessment or similar shall be conducted.</p>	<p>Prior to construction</p>	<p>Once</p>	<p>Project sponsor</p>			



Mitigation Measure	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
<p>prior to construction, a qualified biologist shall conduct a biological resources assessment (BRA) or similar type of study to document the existing biological resources within the project footprint plus a buffer and to determine the potential impacts to those resources. The BRA shall evaluate the potential for impacts to all biological resources including, but not limited to special status species, nesting birds, wildlife movement, sensitive plant communities/critical habitat, and other resources judged to be sensitive by local, state, and/or federal agencies. Pending the results of the BRA, design alterations, further technical studies (i.e. protocol surveys) and/or consultations with the USFWS, CDFW and/or other local, state, and federal agencies may be required. The following mitigation measures [B-1(b) through B-1(k)] shall be incorporated, only as applicable, into the BRA for projects where specific resources are present or may be present and impacted by the project. Note that specific surveys described in the mitigation measures below may be completed as part of the BRA where suitable habitat is present.</p>							
<p><b>B-1(b) Special Status Plant Species Surveys.</b> If completion of the project-specific BRA determines that special status plant species may occur on-site, surveys for special status plants shall be completed prior to any vegetation removal, grubbing, or other construction activity of each segment (including staging and mobilization). The surveys shall be floristic in nature and shall be seasonally-timed to coincide with the target species identified in the project-specific BRA. All plant surveys</p>	<p>If applicable, surveys for special status plants shall be completed.</p>	<p>During individual environmental review</p>	<p>Once</p>	<p>Project sponsor</p>			



2014 RTP-SCS PEIR  
**Mitigation Monitoring and Reporting Program**

Mitigation Measure	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
shall be conducted by a qualified biologist approved by the implementing agency no more than two years before initial ground disturbance. All special status plant species identified on-site shall be mapped onto a site-specific aerial photograph and topographic map. Surveys shall be conducted in accordance with the most current protocols established by the CDFW, USFWS, and the local jurisdictions if said protocols exist. A report of the survey results shall be submitted to the implementing agency, and the CDFW and/or USFWS, as appropriate, for review and approval.							
<b>B-1(c) Special Status Plant Species Avoidance, Minimization, and Mitigation.</b> If State listed or California Rare Plant List 1B species are found during special status plant surveys [pursuant to mitigation measure B-1(b)], then the project shall be re-designed to avoid impacting these plant species, if feasible. Rare plant occurrences that are not within the immediate disturbance footprint, but are located within 50 feet of disturbance limits shall have bright orange protective fencing installed at least 30 feet beyond their extent, or other distance as approved by a qualified biologist, to protect them from harm.	If applicable, project shall be redesigned to avoid impacting rare plant species.	During individual environmental review	Once	Project sponsor			
<b>B-1(d) Restoration and Monitoring.</b> If special status plants species cannot be avoided and will be impacted by a project implemented under the 2014 RTP-SCS, all impacts shall be mitigated at a minimum ratio of 2:1 (number of acres/individuals restored to number of acres/individuals impacted) for each species as a component of habitat restoration. A restoration plan	If applicable, project plans shall include project-specific mitigation measures to mitigate impacts at a minimum ratio of 2:1 and a restoration plan shall be prepared meeting all	During individual environmental review	Once	Project sponsor			



Mitigation Measure	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
<p>shall be prepared and submitted to the jurisdiction overseeing the project for approval. (Note: if a state listed plant species will be impacted, the restoration plan shall be submitted to the CDFW for approval). The restoration plan shall include, at a minimum, the following components:</p> <ul style="list-style-type: none"> <li>• Description of the project/impact site (i.e., location, responsible parties, areas to be impacted by habitat type);</li> <li>• Goal(s) of the compensatory mitigation project [type(s) and area(s) of habitat to be established, restored, enhanced, and/or preserved; specific functions and values of habitat type(s) to be established, restored, enhanced, and/or preserved];</li> <li>• Description of the proposed compensatory mitigation site (location and size, ownership status, existing functions and values);</li> <li>• Implementation plan for the compensatory mitigation site (rationale for expecting implementation success, responsible parties, schedule, site preparation, planting plan);</li> <li>• Maintenance activities during the monitoring period, including weed removal as appropriate (activities, responsible parties, schedule);</li> <li>• Monitoring plan for the compensatory mitigation site, including no less than quarterly monitoring for the first year (performance standards, target functions and values, target acreages to be established, restored, enhanced, and/or preserved, annual monitoring reports);</li> <li>• Success criteria based on the goals and measurable objectives; said</li> </ul>	requirements.						



2014 RTP-SCS PEIR  
**Mitigation Monitoring and Reporting Program**

Mitigation Measure	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
<p>criteria to be, at a minimum, at least 80 percent survival of container plants and 30 percent relative cover by vegetation type;</p> <ul style="list-style-type: none"> <li>• An adaptive management program and remedial measures to address any shortcomings in meeting success criteria;</li> <li>• Notification of completion of compensatory mitigation and agency confirmation; and</li> <li>• Contingency measures (initiating procedures, alternative locations for contingency compensatory mitigation, funding mechanism).</li> </ul>							
<p><b>B-1(e) Endangered/Threatened Species Habitat Assessment and Protocol Surveys.</b> Specific habitat assessment and survey protocol surveys are established for several federally and State Endangered or Threatened species. If the results of the BRA determine that suitable habitat may be present any such species, protocol habitat assessments/surveys shall be completed in accordance with CDFW and/or USFWS protocols prior to issuance of any construction permits. If through consultation with the CDFW and/or USFWS it is determined that protocol habitat assessments/surveys are not required, said consultation shall be documented prior to issuance of any construction permits. Each protocol has different survey and timing requirements. The applicants for each project shall be responsible for ensuring they understand the protocol requirements.</p>	<p>If applicable, protocol habitat assessments/surveys shall be completed in accordance with protocols.</p>	<p>During individual environmental review</p>	<p>Once</p>	<p>Project sponsor</p>			
<p><b>B-1(f) Endangered/Threatened Species Avoidance and Minimization.</b> The habitat requirements of endangered and</p>	<p>If applicable, project plans shall include project-specific</p>	<p>During individual environmental review</p>	<p>Once</p>	<p>Project sponsor</p>			



2014 RTP-SCS PEIR  
**Mitigation Monitoring and Reporting Program**

Mitigation Measure	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
<p>threatened species throughout Kings County are highly variable. The potential impacts from any given project implemented under the 2014 RTP-SCS are likewise highly variable. However, there are several avoidance and minimization measures which can be applied for a variety of species to reduce the potential for impact, with the final goal of no net loss of the species. The following measures may be applied to aquatic and/or terrestrial species. Project sponsors shall select from these measures as appropriate.</p> <ul style="list-style-type: none"> <li>• Ground disturbance shall be limited to the minimum necessary to complete the project. The project limits of disturbance shall be flagged. Areas of special biological concern within or adjacent to the limits of disturbance shall have highly visible orange construction fencing installed between said area and the limits of disturbance.</li> <li>• All projects occurring within/adjacent to aquatic habitats (including riparian habitats and wetlands) shall be completed between April 1 and October 31, if feasible, to avoid impacts to sensitive aquatic species.</li> <li>• All projects occurring within or adjacent to sensitive habitats that may support federally and/or state Endangered/Threatened species shall have a CDFW and/or USFWS-approved biologist present during all initial ground disturbing/vegetation clearing activities. Once initial ground disturbing/vegetation clearing activities have been completed, said biologist shall conduct daily pre-activity clearance surveys for Endangered/Threatened species.</li> </ul>	<p>mitigation measures to avoid and minimize impacts to endangered or threatened species.</p>						



2014 RTP-SCS PEIR  
**Mitigation Monitoring and Reporting Program**

Mitigation Measure	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
<p>Alternatively, and upon approval of the CDFW and/or USFWS, said biologist may conduct site inspections at a minimum of once per week to ensure all prescribed avoidance and minimization measures are begin fully implemented.</p> <ul style="list-style-type: none"> <li>• No Endangered/Threatened species shall be captured and relocated without expressed permission from the CDFW and/or USFWS.</li> <li>• If at any time during construction of the project an Endangered/Threatened species enters the construction site or otherwise may be impacted by the project, all project activities shall cease. A CDFW/USFWS-approved biologist shall document the occurrence and consult with the CDFW and/or USFWS as appropriate.</li> <li>• For all projects occurring in areas where Endangered/Threatened species may be present and are at risk of entering the project site during construction, exclusion fencing shall be placed along the project boundaries prior to start of construction (including staging and mobilization). The placement of the fence shall be at the discretion of the CDFW/USFWS-approved biologist. This fence shall consist of solid silt fencing placed at a minimum of 3 feet above grade and 2 feet below grade and shall be attached to wooden stakes placed at intervals of not more than 5 feet. The fence shall be inspected weekly and following rain events and high wind events and shall be maintained in good working condition until all construction activities are complete.</li> </ul>							



2014 RTP-SCS PEIR  
**Mitigation Monitoring and Reporting Program**

Mitigation Measure	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
<ul style="list-style-type: none"> <li>All vehicle maintenance/fueling/staging shall occur not less than 100 feet from any riparian habitat or water body. Suitable containment procedures shall be implemented to prevent spills. A minimum of one spill kit shall be available at each work location near riparian habitat or water bodies.</li> <li>No equipment shall be permitted to enter wetted portions of any affected drainage channel.</li> <li>All equipment operating within streams shall be in good conditions and free of leaks. Spill containment shall be installed under all equipment staged within stream areas and extra spill containment and clean up materials shall be located in close proximity for easy access.</li> <li>If project activities could degrade water quality, water quality sampling shall be implemented to identify the pre-project baseline, and to monitor during construction for comparison to the baseline.</li> <li>If water is to be diverted around work sites, a diversion plan shall be submitted (depending upon the species that may be present) to the CDFW, RWQCB, USFWS, and/or NMFS for their review and approval prior to the start of any construction activities (including staging and mobilization). If pumps are used, all intakes shall be completely screened with wire mesh not larger than five millimeters to prevent animals from entering the pump system.</li> <li>At the end of each work day, excavations shall be secured with cover or a ramp provided to prevent</li> </ul>							





2014 RTP-SCS PEIR  
**Mitigation Monitoring and Reporting Program**

Mitigation Measure	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
<p>wildlife entrapment.</p> <ul style="list-style-type: none"> <li>All trenches, pipes, culverts or similar structures shall be inspected for animals prior to burying, capping, moving, or filling.</li> <li>The CDFW/USFWS-approved biologist shall remove invasive aquatic species such as bullfrogs and crayfish from suitable aquatic habitat whenever observed and shall dispatch them in a humane manner and dispose of properly.</li> <li>If any federally and/or state protected species are harmed, the CDFW/USFWS-approved biologist shall document the circumstances that led to harm and shall determine if project activities should cease or be altered in an effort to avoid additional harm to these species. Dead or injured special status species shall be disposed of at the discretion of the CDFW and USFWS. All incidences of harm shall be reported to the CDFW and USFWS within 48 hours.</li> <li>Considering the potential for projects to impact Federal and State listed species and their habitat, KCAG and sponsor agencies shall contact the CDFW and USFWS to identify mitigation banks within Kings County during development of the RTP. Upon implementation of projects included in the RTP, but on a project-by-project basis, if the results of the BRA determines that impacts to Federal and State threatened or endangered species habitat are expected, KCAG and sponsor agencies shall explore species appropriate mitigation bank(s)</li> </ul>							



Mitigation Measure	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
in the County for purchase of mitigation credits.							
<p><b>B-1(g) Non-Listed Special Status Animal Species Avoidance and Minimization.</b>                      Several State Species of Special Concern may be impacted by transportation projects implemented under the 2014 RTP-SCS. The ecological requirements and potential for impacts is highly wvariable among these species. Depending on the species identified in the BRA, several of the measures identified under B-1(f) shall be applicable to the project. In addition, measures shall be selected from among the following to reduce the potential for impacts to non-listed special status animal species:</p> <ul style="list-style-type: none"> <li>For non-listed special-status terrestrial amphibians and reptiles, coverboard surveys shall be completed within three months of the start of construction. The coverboards shall be at least four feet by four feet and constructed of untreated plywood placed flat on the ground. The coverboards shall be checked by a qualified biologist once per week for each week after placement up until the start of vegetation removal. All non-listed special status and common animals found under the coverboards shall be captured and placed in five-gallon buckets for transportation to relocation sites. All relocation sites shall be reviewed by the project sponsor and shall consist of suitable habitat. Relocation sites shall be as close to the capture site as possible but far enough away to ensure the animal(s) is not harmed by construction of the project. Relocation shall occur on the same day</li> </ul>	If applicable, project plans shall include project-specific mitigation measures to reduce impacts to non-listed special status species.	During individual environmental review	Once	Project sponsor			



Mitigation Measure	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
<p>as capture. CNDDDB Field Survey Forms shall be submitted to the CFDW for all special status animal species observed.</p> <ul style="list-style-type: none"> <li>• Pre-construction clearance surveys shall be conducted within 14 days of the start of construction (including staging and mobilization). The surveys shall cover the entire disturbance footprint plus a minimum 200 foot buffer, if feasible, and shall identify all special status animal species that may occur on-site. All non-listed special status species shall be relocated from the site either through direct capture or through passive exclusion (e.g., American badger). A report of the pre-construction survey shall be submitted to KCAG, RTPA, and or the local jurisdiction for their review and approval prior to the start of construction.</li> <li>• A qualified biologist shall be present during all initial ground disturbing activities, including vegetation removal to recover special status animal species unearthed by construction activities.</li> <li>• Upon completion of the project, a qualified biologist shall prepare a Final Compliance report documenting all compliance activities implemented for the project, including the pre-construction survey results. The report shall be submitted within 30 days of completion of the project.</li> <li>• If special status bat species may be present and impacted by the project, a qualified biologist shall conduct within 30 days of the start of construction presence/absence surveys for special</li> </ul>							



2014 RTP-SCS PEIR  
**Mitigation Monitoring and Reporting Program**

Mitigation Measure	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
<p>status bats in consultation with the CDFW where suitable roosting habitat is present. Surveys shall be conducted using acoustic detectors and by searching tree cavities, crevices, and other areas where bats may roost. If active roosts are located, exclusion devices such as netting shall be installed to discourage bats from occupying the site. If a roost is determined by a qualified biologist to be used by a large number of bats (large hibernaculum), bat boxes shall be installed near the project site. The number of bat boxes installed will depend on the size of the hibernaculum and shall be determined through consultations with the CDFW. If a maternity colony has become established, all construction activities shall be postponed within a 500-foot buffer around the maternity colony until it is determined by a qualified biologist that the young have dispersed. Once it has been determined that the roost is clear of bats, the roost shall be removed immediately.</p>							
<p><b>B-1(h) Preconstruction Surveys for Nesting Birds.</b> For construction activities occurring during the nesting season (generally February 1 to September 15), surveys for nesting birds covered by the California Fish and Game Code and the Migratory Bird Treaty Act shall be conducted by a qualified biologist no more than 14 days prior to vegetation removal. The surveys shall include the entire segment disturbance area plus a 200 foot buffer around the site. If active nests are located, all construction work shall be</p>	<p>If applicable, a survey for nesting birds shall be completed; if necessary, a buffer shall be created.</p>	<p>Prior to construction activities; during construction activities if required.</p>	<p>Once prior to construction; as needed during construction activities.</p>	<p>Project sponsor</p>			



2014 RTP-SCS PEIR  
**Mitigation Monitoring and Reporting Program**

Mitigation Measure	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
<p>conducted outside a buffer zone from the nest to be determined by the qualified biologist. The buffer shall be a minimum of 50 feet for non-raptor bird species and at least 150 feet for raptor species. Larger buffers may be required depending upon the status of the nest and the construction activities occurring in the vicinity of the nest. The buffer area(s) shall be closed to all construction personnel and equipment until the adults and young are no longer reliant on the nest site. A qualified biologist shall confirm that breeding/nesting is completed and young have fledged the nest prior to removal of the buffer. A report of these preconstruction nesting bird surveys shall be submitted to KCAG, RTPA, and/or the local jurisdiction.</p>							
<p><b>B-1(i) Worker Environmental Awareness Program (WEAP).</b> Prior to initiation of construction activities (including staging and mobilization), all personnel associated with project construction shall attend WEAP training, conducted by a qualified biologist, to aid workers in recognizing special status resources that may occur in the project area. The specifics of this program shall include identification of the sensitive species and habitats, a description of the regulatory status and general ecological characteristics of sensitive resources, and review of the limits of construction and mitigation measures required to reduce impacts to biological resources within the work area. A fact sheet conveying this information shall also be prepared for distribution to all contractors, their employers, and other personnel involved with construction of the project. All employees shall sign a form documenting</p>	<p>If applicable, construction personnel shall attend WEAP training.</p>	<p>Prior to construction activities.</p>	<p>Once</p>	<p>Project Sponsor</p>			



2014 RTP-SCS PEIR  
**Mitigation Monitoring and Reporting Program**

Mitigation Measure	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
provided by the trainer indicating they have attended the WEAP and understand the information presented to them. The form shall be submitted to KCAG and/or the local jurisdiction to document compliance.							
<b>B-1(j) Tree Protection.</b> If it is determined that construction may impact trees protected by local agencies, the project sponsor shall procure all necessary tree removal permits. A tree protection and replacement plan shall be developed by a certified arborist as appropriate. The plan shall include, but would not be limited to, an inventory of trees to within the construction site, setbacks from trees and protective fencing, restrictions regarding grading and paving near trees, direction regarding pruning and digging within root zone of trees, and requirements for replacement and maintenance of trees. If protected trees will be removed, replacement tree plantings of like species in accordance with local agency standards, but at a minimum ratio of 2:1 (trees planted to trees impacted), shall be installed on-site or at an approved off-site location and a restoration and monitoring program shall be developed in accordance with B-1(d) and shall be implemented for a minimum of seven years or until stasis has been determined by certified arborist. If a protected tree shall be encroached upon but not removed, a certified arborist shall be present to oversee all trimming of roots and branches.	If applicable, tree removal permits shall be acquired and a tree protection and replacement plan shall be developed with requirements. Replacement planting/restoration shall be monitored until stasis is achieved.	Review plan prior to construction activities. Review restoration annually for minimum of seven years or until stasis is achieved.	Once prior to construction; annually after restoration until stasis is achieved.	Project sponsor			
<b>B-2(a) Jurisdictional Delineation.</b> If projects implemented under the 2014 RTP-SCS occur within or adjacent to wetland, drainages, riparian habitats, or other areas that may fall under the jurisdiction of the CDFW, USACE, and/or RWQCB, a qualified	If applicable, a jurisdictional delineation shall be completed. Receipt of regulatory agency permits, if necessary, shall be	During individual environmental review; verify permit acquisition prior to issuance of grading permits	Once during environmental review; once prior to issuance of grading	Project sponsor			



Mitigation Measure	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
<p>biologist shall complete a jurisdictional delineation. The jurisdictional delineation shall determine the extent of the jurisdiction for each of these agencies and shall be conducted in accordance with the requirement set forth by each agency. The result shall be a preliminary jurisdictional delineation report that shall be submitted to the implementing agency, USACE, RWQCB, and CDFW, as appropriate, for review and approval. If jurisdictional areas are expected to be impacted, then the RWQCB would require a Waste Discharge Requirements (WDR) permit and/or Section 401 Water Quality Certification (depending upon whether or not the feature falls under federal jurisdiction). If CDFW asserts its jurisdictional authority, then a Streambed Alteration Agreement pursuant to Section 1600 et seq. of the California Fish and Game Code would also be required prior to construction within the areas of CDFW jurisdiction. If the USACE asserts its authority, then a permit pursuant to Section 404 of the Clean Water Act would likely be required.</p>	<p>verified.</p>		<p>permits; as needed, during and following construction.</p>				
<p><b>B-2(b) Wetland and Riparian Habitat Restored.</b> Impacts to jurisdictional wetland and riparian habitat shall be mitigated at a minimum ratio of 2:1 (acres of habitat restored to acres impacted), and shall occur on-site or as close to the impacted habitat as possible. A mitigation and monitoring plan shall be developed by a qualified biologist in accordance with mitigation measure B-1(d) above and shall be implemented for no less than five years after construction of the segment, or until the KCAG/RTPA/local jurisdiction and/or the permitting authority (e.g., CDFW or USACE) has determined that restoration has been</p>	<p>If applicable, project plans shall mitigate impacts to jurisdictional wetlands and riparian habitats at a ratio of 2:1 and a MMRP shall be developed. Compliance with permit conditions shall be verified.</p>	<p>During environmental review. Verify compliance with permit conditions as necessary during following construction.</p>	<p>Once during environmental review; as needed, during and following construction.</p>	<p>Project sponsor</p>			



2014 RTP-SCS PEIR  
**Mitigation Monitoring and Reporting Program**

Mitigation Measure	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
successful.							
<b>B-2(c) Landscaping Plan.</b> If landscaping is proposed for a specific project, a qualified biologist/landscape architect shall prepare a landscape plan for that project. This plan shall indicate the locations and species of plants to be installed. Drought tolerant, locally native plant species shall be used. Noxious, invasive, and/or non-native plant species that are recognized on the Federal Noxious Weed List, California Noxious Weeds List, and/or California Invasive Plant Council Lists 1, 2, and 4 shall not be permitted. Species selected for planting shall be similar to those species found in adjacent native habitats.	If applicable, a landscaping plan shall be prepared and include all requirements; species shall be similar to those in adjacent native habitats.	During environmental review	Once	Project sponsor			
<b>B-2(d) Invasive Weed Prevention and Management Program.</b> Prior to start of construction for each project, an Invasive Weed Prevention and Management Program shall be developed by a qualified biologist to prevent invasion of native habitat by non-native plant species. A list of target species shall be included, along with measures for early detection and eradication. All disturbed areas shall be hydroseeded with a mix of locally native species upon completion of work in those areas. In areas where construction is ongoing, hydroseeding shall occur where no construction activities have occurred within six (6) weeks since ground disturbing activities ceased. If exotic species invade these areas prior to hydroseeding, weed removal shall occur in consultation with a qualified biologist and in accordance with the restoration plan.	An Invasive Weed Prevention and Management Program shall be developed; disturbed areas shall be hydroseeded.	Prior to construction activities; during construction activities	Once; ongoing during construction	Project sponsor			





Mitigation Measure	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
<p><b>B-3(a) Fence and Lighting Design.</b> All projects including long segments of fencing and lighting shall be designed to minimize impacts to wildlife. Fencing shall not block wildlife movement through riparian or other natural habitat. Where fencing is required for public safety concerns, the fence shall be designed to permit wildlife movement by incorporating design features such as:</p> <ul style="list-style-type: none"> <li>• A minimum 16 inches between the ground and the bottom of the fence to provide clearance for small animals;</li> <li>• A minimum 12 inches between the top two wires, or top the fence with a wooden rail, mesh, or chain link instead of wire to prevent animals from becoming entangled; and</li> <li>• If privacy fencing is required near open space areas, openings at the bottom of the fence measure at least 16 inches in diameter shall be installed at reasonable intervals to allow wildlife movement.</li> </ul> <p>If fencing must be designed in such a manner that wildlife passage would not be permitted, wildlife crossing structures shall be incorporated into the project design as appropriate.</p> <p>Similarly, lighting installed as part of any project shall be designed to be minimally disruptive to wildlife. This may be accomplished through the use of hoods to direct light away from natural habitat, using low intensity lighting, and using a few lights as necessary to achieve the goals of the project.</p>	<p>Project plans for projects with fencing and lighting shall be designed to minimize impacts to wildlife.</p>	<p>During environmental review</p>	<p>Once</p>	<p>Project sponsor</p>			
<p><b>B-3 (b) Construction Best Management Practices.</b> The following construction Best Management Practices (BMPs) shall be</p>	<p>Construction plans shall incorporate best management practices</p>	<p>Prior to issuance of grading permits</p>	<p>Once during plan review</p>	<p>Project sponsor and on-site construction</p>			



2014 RTP-SCS PEIR  
**Mitigation Monitoring and Reporting Program**

Mitigation Measure	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
incorporated into all grading and construction plans: <ul style="list-style-type: none"> <li>• Designation of a 20 mile per hour speed limit in all construction areas.</li> <li>• All vehicles and equipment shall be parked on pavement, existing roads, and previously disturbed areas, and clearing of vegetation for vehicle access shall be avoided to the greatest extent feasible.</li> <li>• The number of access routes, number and size of staging areas, and the total area of the activity shall be limited to the minimum necessary to achieve the goal of the project.</li> <li>• Designation of equipment washout and fueling areas to be located within the limits of grading at a minimum of 100 feet from waters, wetlands, or other sensitive resources as identified by a qualified biologist. Washout areas shall be designed to fully contain polluted water and materials for subsequent removal from the site.</li> <li>• Daily construction work schedules should be limited to daylight hours only, to the extent feasible.</li> <li>• Mufflers shall be used on all construction equipment and vehicles shall be in good operating condition.</li> <li>• Drip pans shall be placed under all stationary vehicles and mechanical equipment.</li> <li>• All trash shall be placed in sealed containers and shall be removed from the project site a minimum of once per week.</li> <li>• No pets are permitted on project site during construction.</li> <li>•</li> </ul>	to minimize impacts to biological resources.			manager			



Mitigation Measure	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
<b>CULTURAL RESOURCES</b>							
<p><b>CR-1(a)</b> The project sponsor of a 2014 RTP-SCS project involving earth disturbance, the installation of pole signage or lighting, or construction of permanent above ground structures or roadways shall ensure that the following elements are included in the project's individual environmental review:</p> <ol style="list-style-type: none"> <li>1. Prior to construction, a map defining the Area of Potential Effects (APE) shall be prepared on a project by project basis for 2014 RTP-SCS improvements which involve earth disturbance, the installation of pole signage or lighting, or construction of permanent above ground structures. This map will indicate the areas of primary and secondary disturbance associated with construction and operation of the facility and will help in determining whether known archaeological, paleontological or historical resources are located within the impact zone.</li> <li>2. A preliminary study of each project area, as defined in the APE, shall be completed to determine whether or not the project area has been studied under an earlier investigation, and to determine the impacts of the previous project.</li> <li>3. If the results of the preliminary studies indicate additional studies are necessary; development of field studies and/or other documentary research shall be developed and completed (Phase I studies). Negative results would result in no additional studies for the project area.</li> <li>4. Based on positive results of the Phase I studies, an evaluation of identified</li> </ol>	<p>Project plans shall include required components to limit impacts to cultural resources.</p>	<p>During individual environmental review</p>	<p>Once</p>	<p>Project sponsor</p>			



2014 RTP-SCS PEIR  
**Mitigation Monitoring and Reporting Program**

Mitigation Measure	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
<p>resources shall be completed to determine the potential eligibility/significance of the resources (Phase II studies).</p> <p>5. Phase III mitigation studies shall be coordinated with the Office of Historic Preservation, as the research design will require review and approval from the OHP. In the case of prehistoric or Native American related resources, the Native American Heritage Commission and/or local representatives of the Native American population shall be contacted and permitted to respond to the testing/mitigation programs.</p>							
<p><b>CR-1(b)</b> If development of the proposed improvement requires the presence of an archaeological, Native American, or paleontological monitor, the project sponsor shall ensure that a Native American monitor, certified archaeologist, and/or certified paleontologist, as applicable, monitors the grading and/or other initial ground altering activities. The schedule and extent of the monitoring will depend on the grading schedule and/or extent of the ground alterations. This requirement can be accomplished through placement of conditions on the project by the local jurisdiction during individual environmental review.</p>	<p>Place conditions of approval on the project to ensure that a Native American monitor or certified archaeologist/paleontologist monitors the grading and/or other ground altering activities if required.</p>	<p>Apply conditions during individual project permitting; monitoring will depend on the schedule and extent of the monitoring will depend on the grading schedule and/or extent of the ground alterations.</p>	<p>Once during individual environmental review; monitor as needed during construction</p>	<p>Project sponsor</p>			
<p><b>CR-1(c)</b> The project sponsor shall ensure that materials recovered over the course of any given improvement are adequately cleaned, labeled, and curated at a recognized repository. This requirement can be accomplished through placement of conditions on the project by the local jurisdiction during individual environmental</p>	<p>Place conditions of approval on project to ensure that materials recovered are adequately cleaned, labeled, and curated at a recognized repository.</p>	<p>During individual project permitting</p>	<p>Once</p>	<p>Project sponsor</p>			



2014 RTP-SCS PEIR  
**Mitigation Monitoring and Reporting Program**

Mitigation Measure	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
review.							
<p><b>CR-1(d)</b> The project sponsor shall ensure that mitigation for potential impacts to significant cultural resources includes one or more of the following:</p> <ul style="list-style-type: none"> <li>• Realignment of the project right-of-way (avoidance; the most preferable method);</li> <li>• Capping of the site and leaving it undisturbed;</li> <li>• Addressing structural remains with respect to NRHP guidelines (Phase III studies);</li> <li>• Relocating structures per NRHP guidelines;</li> <li>• Creation of interpretative facilities; and/or</li> <li>• Development of measures to prevent vandalism.</li> </ul> <p>This can be accomplished through placement of conditions on the project by the local jurisdiction during individual environmental review.</p>	Place applicable conditions of approval on project to ensure mitigation for potential impacts includes requirements.	During individual project permitting	Once	Project sponsor			
<b>ENERGY</b>							
<p><b>E-1(a)</b> New transportation facilities should be designed with energy-efficient equipment, provided that additional capital costs are offset by estimated energy savings during the first 5 years of operation. Additional improvements with longer payback periods, such as photovoltaic solar electric systems, should be considered where applicable.</p>	Development plans shall be designed with energy-efficient equipment provided that additional capital costs are offset by estimated energy savings during the first 5 years of operation.	Prior to issuance of a grading permit	Once	Project sponsor			
<p><b>E-1(b)</b> All lighting should be energy efficient and designed to use the least amount of energy to serve the purpose of the lighting. Lighting should utilize solar energy</p>	Development plans shall be designed with energy-efficient lighting equipment and should	Prior to issuance of a grading permit	Once	Project sponsor			



2014 RTP-SCS PEIR  
**Mitigation Monitoring and Reporting Program**

Mitigation Measure	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
wherever feasible.	utilitize solar energy wherever feasible.						
<b>E-1(c)</b> New landscaping design and irrigation systems for transportation projects should be water efficient.	Development plans shall be designed with water efficiency irrigation systems.	Prior to issuance of a grading permit	Once	Project sponsor			
<b>GEOLOGY AND SOILS</b>							
<b>G-1</b> The project sponsor shall ensure that the structure is designed and constructed to the latest geotechnical standards. This may necessitate site-specific geologic and soils engineering investigations to exceed the code for high groundshaking zones.	Place conditions of approval on projects to ensure the structure is designed and constructed to the latest geotechnical standard	During individual environmental review					
<b>G-2(a)</b> If a 2014 RTP-SCS project is located in an area of moderate to high liquefaction potential, the project sponsor shall ensure that the project is designed based upon appropriate geology, soils and earthquake engineering studies. Possible design measures include deep foundations, removal of liquefiable materials and dewatering.	Place conditions of approval on the project, when applicable, to ensure that a site-specific geotechnical investigation is conducted.	During individual environmental review	Once	Project sponsor			
<b>G-2(b)</b> If a 2014 RTP-SCS project involves cut slopes over 15 feet in height, the project sponsor shall ensure that specific slope stabilization studies are conducted. Possible stabilization methods include buttresses, retaining walls and soldier piles.	Place conditions of approval on the project, when applicable, to ensure that a site-specific geotechnical investigation is conducted.	During individual environmental review	Once	Project sponsor			
<b>G-2(c)</b> If a 2014 RTP-SCS project is located in an area of expansive soils, the project sponsor shall ensure that a site-specific investigation and appropriate design factors are implemented. Such design factors could include concrete slabs on grade with increased steel reinforcement, removal of highly expansive material and	Place conditions of approval on the project, when applicable, to ensure that a site-specific geotechnical investigation is conducted.	During individual environmental review	Once	Project sponsor			



Mitigation Measure	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
replacement with non-expansive import fill material, or chemical treatment with hydrated lime to reduce the expansion characteristics of the soils.							
<b>GREENHOUSE GAS EMISSIONS</b>							
<p><b>Impact GHG-1</b> The project sponsor shall ensure that applicable GHG-reducing diesel particulate and NOX emissions measures for off-road construction vehicles are implemented during construction. The measures shall be noted on all construction plans and the project sponsor shall perform periodic site inspections. Applicable GHG-reducing measures include the following.</p> <ul style="list-style-type: none"> <li>• Use of diesel construction equipment meeting ARB's Tier 2 certified engines or cleaner off-road heavy-duty diesel engines, and comply with the State Off-Road Regulation;</li> <li>• Use of on-road heavy-duty trucks that meet the ARB's 2007 or cleaner certification standard for on-road heavy-duty diesel engines, and comply with the State On-Road Regulation;</li> <li>• All on and off-road diesel equipment shall not idle for more than 5 minutes. Signs shall be posted in the designated queuing areas and or job sites to remind drivers and operators of the 5 minute idling limit;</li> <li>• Use of electric equipment in place of diesel-powered equipment, where feasible;</li> <li>• Substitute gasoline-powered in place of diesel-powered equipment, where feasible;</li> <li>• Use of alternatively fueled</li> </ul>	Construction plans shall incorporate standard GHG control measures; project sponsor shall ensure implementation.	Prior to issuance of grading permits; periodically during construction	Once during plan review; periodically during construction	Project sponsor and on-site construction manager			



2014 RTP-SCS PEIR  
**Mitigation Monitoring and Reporting Program**

Mitigation Measure	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
construction equipment, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane or biodiesel, in place of diesel powered equipment for 15 percent of the fleet; <ul style="list-style-type: none"> <li>• Use of materials sources from local suppliers; and</li> <li>• Recycling and reuse of at least 50 percent of construction waste materials.</li> </ul>							
<b>HYDROLOGY AND WATER RESOURCES</b>							
<b>W-1(a)</b> The project sponsor shall ensure that, where economically feasible, reclaimed water is used for dust suppression during construction activities.	Where economically feasible, reclaimed and/or desalinated water shall be used for dust suppression during construction activities.	Prior to issuance of grading permit	Once	Project sponsor			
<b>W-1(b)</b> The project sponsor shall ensure that low water use landscaping (i.e., drought tolerant plants and drip irrigation) is installed.	Low water use landscaping (i.e., drought tolerant plants and drip irrigation) shall be installed.	During individual environmental review	Once	Project sponsor			
<b>W-1(c)</b> The project sponsor shall ensure that, if feasible, landscaping associated with proposed improvements is maintained using reclaimed water.	If feasible, landscaping associated with proposed improvements is maintained using reclaimed and/or desalinated water.	During individual environmental review	Once	Project sponsor			
<b>W-1(d)</b> The project sponsor shall ensure that porous pavement materials are utilized, where feasible, to allow for groundwater percolation.	Use porous pavement materials where feasible.	During individual environmental review	Once	Project sponsor			
<b>W-1(e)</b> The sponsor of a 2014 RTP-SCS project that requires potable water service should coordinate with water supply system operators to ensure that the existing water	Provide infrastructure improvements for the appropriate public service or utility as	During individual environmental review	Once	Project sponsor			





2014 RTP-SCS PEIR  
**Mitigation Monitoring and Reporting Program**

Mitigation Measure	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
supply systems have the capacity to handle the increase. If the current infrastructure servicing the project site is found to be inadequate, infrastructure improvements for the appropriate public service or utility should be provided by the project sponsor. In addition, wherever feasible, reclaimed water should be used for landscaping purposes instead of potable water.	needed.						
<b>W-2(a)</b> The project sponsor shall ensure that fertilizer/pesticide application plans for any new right-of-way landscaping are prepared to minimize deep percolation of contaminants. This shall be accomplished through the placement of conditions on the project by the local jurisdiction during individual environmental review.	Fertilizer/pesticide application plans for any new right-of-way landscaping shall be prepared to minimize deep percolation of contaminants.	During individual environmental review	Once	Project sponsor			
<b>W-2(b)</b> The project sponsor shall ensure that the road widening or roadway extension improvement projects directs runoff into subsurface percolation basins and traps which would allow for the removal of urban pollutants, fertilizers, pesticides, and other chemicals. This shall be accomplished through the placement of conditions on the project by the local jurisdiction during individual environmental review.	Improvements shall direct runoff into subsurface percolation basins and traps.	During individual environmental review	Once	Project sponsor			
<b>W-2(c)</b> For roadway projects that would disturb at least one acre, a SWPPP shall be developed prior to the initiation of grading and implemented for all construction activity on the project site. The SWPPP shall include specific BMPs to control the discharge of material from the site and into the creeks and local storm drains. BMP methods may include, but would not be limited to, the use of temporary retention basins, straw bales, sand bagging, mulching, erosion control blankets and soil	Construction plans shall include a Storm Water Pollution Prevention Plan (SWPPP) for roadway projects that would disturb at least one acre and shall implement it for all construction activity on the project site; SWPPP shall include specific BMPs to control the	Prior to issuance of grading permit	Once	Project sponsor			



2014 RTP-SCS PEIR  
**Mitigation Monitoring and Reporting Program**

Mitigation Measure	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
stabilizers.	discharge of material from the site and into the creeks and local storm drains.						
<b>W-3</b> If a 2014 RTP-SCS project is located in an area with high flooding potential due a storm event or dam inundation, the project sponsor shall ensure that the structure is elevated at least one foot above the 100-year flood zone elevation and that bank stabilization and erosion control measures are implemented along creek crossings.	Project design shall ensure that all structures are located at least one foot above the 100-year floodzone elevation and that bank stabilization and erosion control measures are implemented.	During individual environmental review	Once	Project sponsor			
<b>LAND USE</b>							
<b>LU-1</b> Setbacks, fences, or other appropriate means shall be used to separate transportation facilities with the potential to generate land use conflicts with adjacent sensitive land uses. Roadways shall be designed to minimize potential impacts to pedestrians and bicyclists, particularly those living in adjacent residential areas, or attending nearby schools. Adequate striping, signs, and signalization shall be installed to slow traffic where appropriate and to reduce safety and noise impacts. The jurisdiction through which the proposed impacting roadway traverses would be responsible for implementing this measure, which may in part be based on project-specific noise and safety studies required by the local agency.	Ensure that construction plans include setbacks, fences or other appropriate means for projects that could result in land use conflicts with adjacent sensitive land uses. Ensure that roadways are designed to minimize potential impacts to pedestrians and bicyclists. Ensure that roadways are designed with adequate stripings, signs and signalization to slow traffic where appropriate and to reduce safety and noise impacts.	During individual environmental.	Once	Project Sponsor			
<b>LU-2(a)</b> The project sponsor of 2014 RTP-SCS projects with the potential to displace residences or businesses should assure that project-specific environmental reviews consider alternative alignments and	Assure that project-specific environmental reviews consider alternative alignments that avoid or minimize	During individual environmental review	Once	Project sponsor			



2014 RTP-SCS PEIR  
**Mitigation Monitoring and Reporting Program**

Mitigation Measure	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
developments that avoid or minimize impacts to nearby residences and businesses.	impacts to nearby residences and businesses.						
<b>LU-2(b)</b> Where project-specific reviews identify displacement or relocation impacts that are unavoidable, the project sponsor should ensure that all applicable local, state, and federal relocation programs are used to assist eligible persons to relocate. In addition, the local jurisdiction shall review the proposed construction schedules to ensure that adequate time is provided to allow affected businesses to find and relocate to other sites.	Ensure that all applicable local, state, and federal relocation programs are used to assist eligible persons to relocate; review the proposed construction schedules to ensure that adequate relocation time is provided.	Prior to issuance of grading permits	Once	Project sponsor			
<b>LU-2(c)</b> For all 2014 RTP-SCS projects that could result in temporary lane closures or access blockage during construction, a temporary access plan should be implemented to ensure continued access to affected cyclists, businesses, and homes. Appropriate signs and safe access shall be guaranteed during project construction to ensure that businesses remain open.	Construction plans for projects that could result in temporary lane closures or access blockage during construction shall contain a temporary access plan that shall be implemented to ensure continued access to affected cyclists, businesses, and homes; construction plans shall guarantee appropriate signs and safe access during project construction.	Prior to issuance of grading permits; during construction	Once prior to issuance of grading permits; as needed during construction	Project sponsor			
<b>LU-5(a)</b> When new roadway extensions or widenings are planned, the project sponsor should assure that project-specific environmental reviews consider alternative alignments that reduce or avoid impacts to Prime Farmlands.	Ensure that environmental reviews consider alternative alignments that reduce or avoid impacts to Prime Farmlands.	During individual environmental review	Once	Project sponsor			



Mitigation Measure	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
<b>LU-5(b)</b> Rural roadway alignments shall follow property lines to the extent feasible, to minimize impacts to the agricultural production value of any specific property. Farmers should be compensated for the loss of agricultural production at the margins of lost property, based on the amount of land deeded as road right-of-way, as a function of the total amount of production on the property.	Ensure that rural roadway alignments follow property lines. Compensate farmers for the loss of agricultural production at the margin of lost property.	Prior to issuance of grading permits	Once	Project sponsor			
<b>LU-5(c)</b> When new roadway extensions are planned in areas that contain sensitive farmland, the local jurisdiction in which the RTP project is located shall assure that project-specific environmental reviews consider the use of agricultural conservation easements on land of at least equal quality and size as compensation for the loss of agricultural land. Agricultural conservation easements could be implemented by directly purchasing easements or donating mitigation fees to a local, regional, or statewide organization or agency whose purpose includes the acquisition and stewardship of agricultural conservation easements.	Ensure that project-specific environmental reviews consider the use of agricultural conservation easements.	During individual environmental review	Once	Project sponsor			
<b>NOISE</b>							
<b>N-1(a)</b> Project sponsors of 2014 RTP-SCS projects shall ensure that, where residences or other noise sensitive uses are located within 800 feet of construction sites, appropriate measures shall be implemented to ensure consistency with local noise ordinance requirements relating to construction. Specific techniques may include, but are not limited to, restrictions on construction timing, use of sound blankets on construction equipment, and the use of temporary walls and noise barriers to block	Ensure consistency with local noise ordinance requirements relating to construction for sensitive uses.	Prior to issuance of grading permits	Once	Project sponsor			



2014 RTP-SCS PEIR  
**Mitigation Monitoring and Reporting Program**

Mitigation Measure	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
and deflect noise.							
<b>N-1(b)</b> If a particular project within 800 feet of sensitive receptors requires pile driving, the local jurisdiction in which this project is located shall require the use of pile drilling techniques instead, where feasible. This shall be accomplished through the placement of mitigation measures or conditions on the project during its individual environmental review.	Place mitigation measures or conditions of approval on project to require the use of pile drilling techniques when applicable and feasible.	During individual environmental review	Once	Project sponsor			
<b>N-1 (c)</b> Project sponsors shall ensure that equipment and trucks used for project construction utilize the best available noise control techniques (including mufflers, use of intake silencers, ducts, engine enclosures and acoustically attenuating shields or shrouds).	Ensure that equipment and trucks use best available noise control techniques.	During individual environmental review	Once	Project sponsor			
<b>N-1(d)</b> Project sponsors shall ensure that impact equipment (e.g., jack hammers, pavement breakers, and rock drills) used for project construction be hydraulically or electrical powered wherever feasible to avoid noise associated with compressed air exhaust from pneumatically powered tools. Where use of pneumatically powered tools is unavoidable, use of an exhaust muffler on the compressed air exhaust can lower noise levels from the exhaust by up to about 10 dBA. When feasible, external jackets on the impact equipment can achieve a reduction of 5 dBA. Whenever feasible, use quieter procedures, such as drilling rather than impact equipment operation.	Ensure that equipment is hydraulically or electrically powered; that an exhaust muffler is used; that external jackets on impact equipment is used; or quitter procedures are used, when feasible and applicable.	During individual environmental review	Once	Project sponsor			
<b>N-1(e)</b> Project sponsors shall locate stationary noise sources such as generators as far from sensitive receptors as possible.	Ensure that stationary noise sources are located away from	During individual environmental review	Once	Project sponsor			



2014 RTP-SCS PEIR  
**Mitigation Monitoring and Reporting Program**

Mitigation Measure	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
Stationary noise sources that must be located near existing receptors will be adequately muffled.	sensitive receptors or muffled.						
<b>N-2(a)</b> If a 2014 RTP-SCS project is located near sensitive uses, the project sponsor shall ensure that a noise survey is conducted to determine potential alternate alignments which allow greater distance from, or greater buffering of, noise-sensitive areas. The noise survey shall be sufficient to indicate existing and projected noise levels, to determine the amount of attenuation needed to reduce potential noise impacts to such uses to an exterior noise level of 65 dBA or less. This shall be accomplished during the project's individual environmental review.	A noise survey shall be conducted to determine alternate alignments which allow greater distance from, or greater buffering of, noise-sensitive areas; noise survey shall be sufficient to indicate existing and projected noise levels, to determine the amount of attenuation needed to reduce potential noise impacts to applicable State and local standards.	During individual environmental review	Once	Project sponsor			
<b>N-2(b)</b> Where new or expanded roadways are found to expose receptors to noise exceeding normally acceptable levels, the project sponsor shall consider various sound attenuation techniques. The preferred methods for mitigating noise impacts will be the use of appropriate setbacks and sound attenuating building design, including retrofit of existing structures with sound attenuating building materials where feasible. In instances where use of these techniques is not feasible, the use of sound barriers (earthen berms, sound walls, or some combination of the two) will be considered. Long expanses of walls or fences should be interrupted with offsets and provided with accents to prevent monotony. Landscape pockets and pedestrian access through walls should be provided. Whenever possible, a combination of elements should be used, including solid fences, walls, and, landscaped berms. Determination of	Development plans shall consider various sound attenuation techniques where new or expanded roadways are found to expose receptors to noise exceeding normally acceptable levels; applicable agency shall assess and determine appropriate noise attenuation barriers on a case-by-case basis.	During individual environmental review	Once	Project sponsor			



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					Initial	Date	Comments
appropriate noise attenuation measures will be assessed on a case-by-case basis during a project's individual environmental review pursuant to the regulations of the applicable agency.							



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