Kern COG

2011

Regional Transportation Plan






Final Subsequent Environmental Impact Report

Final Subsequent Environmental Impact Report for the Kern COG 2011 Regional Transportation Plan

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1.0 EXECUTIVE SUMMARY

1.1 INTRODUCTION

The California Environmental Quality Act (CEQA) requires that a Draft Environmental Impact Report (Draft EIR) be prepared and distributed for a 45-day review by regulatory and other affected agencies and persons, prior to preparation of the Final EIR. The review period provides the opportunity for comments on the proposed project and the Draft EIR. Once comments were received following the 45-day review period, comments were considered and responses were incorporated in this Final SEIR to address any changes or additions necessary to clarify and/or supplement the information contained in the document. This Final SEIR, therefore, represents the culmination of all environmentally related issues raised during review of the Notice of Preparation (reference Appendix A), during development of the Kern COG 2011 Regional Transportation Plan, and during review of the Draft SEIR. In addition, this Final SEIR contains a Mitigation Monitoring and Reporting Program (Appendix D) that identifies the necessary processes required to ensure that the mitigation measures recommended in the SEIR are implemented. Finally, the Final SEIR contains the Statement of Overriding Considerations (reference Appendix C), which identifies the significant, adverse, and unavoidable impacts in the SEIR. The Kern COG Board of Directors is required to balance the benefits of the proposed Project (RTP) against its unavoidable environmental risks in determining whether to approve the Project.

1.2 FORMAT AND SCOPE

This document has been prepared to address written comments received from interested individuals and agencies regarding the NOP prepared for the Regional Transportation Plan and to comply with requirements of CEQA, as well as comments received during the 45-day public review period on the Draft SEIR. The forty-five day Draft SEIR review and comment period began on April 30, 2010 and ended on June 14, 2010.

The Final SEIR is composed of the following documents:

- 2011 Regional Transportation Plan, Draft Environmental Impact Report, April 30, 2010;
- 2011 Regional Transportation Plan, Final Environmental Impact Report, July 15, 2010;
- 2011 Regional Transportation Plan, July 2010; and
- 2011 Air Quality Conformity Finding.

1.3 PROJECT DESCRIPTION

The project, as defined by CEQA Statutes, Section 21065, is the preparation of the 2011 Regional Transportation Plan. Kern Council of Governments (Kern COG) prepared the RTP as required by Section 65080 et seq., of Chapter 2.5 of the *California Government Code* as well as federal guidelines pursuant to the requirements of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). The RTP must also meet Transportation Conformity for the Air Quality Attainment Plan per 40 CFR Part 51 and 40 CFR Part 93. In addition, the RTP must address requirements set forth in Assembly Bill 32, the California Global Warming Solutions Act of 2006. Finally, the California Transportation Commission has prepared guidelines (most recently adopted by the Commission in April 2010, which also includes an Addendum addressing Climate Change and Greenhouse Gas Emissions adopted by the Commission on May 29, 2008) to assist in the preparation of RTPs pursuant to Section 14522 of the *Government Code*.

As the designated Regional Transportation Planning Agency (RTPA), Kern COG is mandated by state and federal law to update the Regional Transportation Plan every four (4) years. The 2007 RTP, adopted on May 17, 2007 by Kern COG, included a list financially constrained improvement projects. On January 15, 2009, Kern COG amended the 2007 RTP (Amendment #1) to reflect changes to the list of projects and certified an Addendum EIR (AEIR) to address potential environmental effects. Improved project financing sources and project delivery schedules reflected in the 2007 RTP and in Amendment #1 were revised again as part of RTP Amendment #2 approved on September 17, 2009.

The RTP is used to guide the development of the Regional Transportation Improvement Program (RTIP). The RTIP is the programming document used to plan the construction of regional transportation projects and requires State Department of Transportation (Caltrans) approval. The RTP is also used as a transportation planning document by each of the twelve member jurisdictions of Kern COG. The members include the County of Kern and the cities of Arvin, Bakersfield, California City, Delano, Maricopa, McFarland, Ridgecrest, Shafter, Taft, Tehachapi, and Wasco.

The RTP identifies the region's transportation needs and issues, sets forth an action plan of projects and programs to address the needs consistent with the adopted policies, and documents the financial resources needed to implement the plan.

The 2011 RTP consists of required elements and is organized into various chapters:

- Chapter 1. Introduction;
- Chapter 2. Transportation Planning Policies;
- Chapter 3. Planning Assumptions;
- Chapter 4. Strategic Investments;
- Chapter 5. Financing Transportation;
- Chapter 6. Future Links;
- Chapter 7. Monitoring Progress;
- Chapter 8. References; and
- Appendices. (Includes the San Joaquin Valley Regional Transportation Overview and other required documents)

1.4 SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVEL OF SIGNIFICANCE

The following section provides a summary of the impacts, mitigation measures, and the environmental determination associated with each of the environmental areas included in the NOP. The NOP determined that a Program EIR is required for the Regional Transportation Plan or "Project" because it could result in significant environmental impacts. The NOP concluded that adoption of the Regional Transportation Plan would result in less than significant impacts on the following environmental issue areas if applicable policies and standards were applied:

- Recreation; and
- Mineral Resources.

This EIR analyzes the Regional Transportation Plan's effects on the following environmental issue areas:

- Aesthetics;
- Agricultural Resources;
- Air Quality;

- Biotic Resources;
- Climate Change;
- Cultural Resources;
- Geology/Soils;
- Hazards & Hazardous Materials;
- Hydrology/Water Quality;
- Land Use/Planning;
- Noise;
- Population/Housing;
- Public Utilities, Other Utilities & Services Systems; and
- Transportation/Traffic.

After review of the NOP responses, it was determined that this Program EIR should focus on the same environmental issues referenced in the NOP and listed above. Finally, as a result of comments received on the Draft SEIR, a new environmental impact area was added – Energy and Energy Conservation.

The environmental impact analysis and mitigation measure evaluation is organized in Section 3 of this SEIR by environmental issue area. Each issue contains a section describing the following:

- Criteria for Significance - The standard by which impacts are measured or the threshold of significance.

- Impact - A description of each impact associated with an environmental issue area. Each impact will be listed by number for future reference.

- Mitigation Measures - A description of the measure to reduce or avoid a significant impact.

- Significance After Mitigation - A statement indicating whether the mitigation measure will reduce an impact to a level less than significant.

Based on findings identified in Section 4 of this SEIR, projects contained in the 2011 RTP, the preferred alternative is the Environmentally Preferred Project Alternative. This alternative was analyzed considering congestion levels and historical growth rates in vehicle miles traveled (VMT) and vehicle trips (VT), as well as anticipated growth in the use of other forms of transportation such as transit, rail, aviation, and non-motorized.

Improvement projects evaluated and identified under this alternative are "financially constrained" in accordance with SAFETEA-LU and air quality conformity requirements. Further, this alternative focuses on "traditional" land use planning activities, i.e., designation of planned growth and development consistent with established land use density policies. This includes the designation of urban development consistent with adopted local agency General Plans.

IMPACTS AND MITIGATION MEASURES

Aesthetics

Impact 3.1.1 – Views Impacts

Construction and implementation of individual projects could potentially impede or block views of scenic resources as seen from the transportation facility or from the surrounding area. This could be a potentially significant impact.

Construction of new facilities or development of previously undisturbed sites could potentially block or impede views of scenic resources in a given area. For example, construction of highways could block or impede views of area mountains and other scenic resources. Grade separated facilities could block or impede views of surrounding scenic resources during and after construction. Moreover, the elevation and scale of the proposed grade separated facilities could be visually intrusive to surrounding areas (depending on the degree of visibility of the transportation facility).

Construction of transportation facilities that involve modifications like widening or upgrading existing roadways would involve lesser changes to the visual environment. These "modification projects" would most likely occur within existing roadway facilities and/or could require acquisition of right-of-way property. However, such changes may not block or impede views of scenic resources to a greater extent than at present.

Mitigation Measures

All mitigation measures will be included in individual improvement project-level analysis, as appropriate. The implementation agency or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with mitigation measures.

- Implement design guidelines, local policies, and programs aimed at protecting views of scenic corridors and avoiding visual intrusions; and

- To the extent feasible, noise barriers that will not degrade or obstruct a scenic view will be constructed. Noise barriers will be well landscaped, complement the natural landscape and be graffiti-resistant.

Significance After Mitigation

This impact is considered significant and unavoidable, because it is likely that there will be situations where visual impacts cannot be mitigated to a less than significant level.

Impact 3.1.2 – Scenic Highway and Vista Point Impacts

Construction and implementation of the projects could alter the appearance of scenic resources along or near designated scenic highways and vista points. This could be a potentially significant impact.

The State Legislature created California Department of Transportation's (Caltrans) State Scenic Highway Program in 1963 to preserve and protect scenic highway corridors from change that would diminish the aesthetic value of lands adjacent to highways. The state laws governing the Scenic Highway Program are stated in the California Streets and Highways Code, Section 260.

The State Scenic Highway System includes a list of highways that have been designated by Caltrans as scenic highways or are eligible for designation as scenic highways. These highways are designated in section 263 of the

Streets and Highways Code. Scenic highway designation can offer the following benefits.

- Protection of the scenic values of an area;
- Enhancement of community identity and pride, encouraging citizen commitment to preserving community values;
- Preservation of scenic resources to enhance land values and make the area more attractive; and
- Promotion of local tourism that is consistent with the community's scenic values.

According to Caltrans, a scenic corridor is the land generally adjacent to and visible from the highway. A scenic corridor is identified using a motorist's line of vision. A reasonable boundary is selected when the view extends to the distant horizon. Caltrans outlines the following minimum requirements for scenic corridor protection: regulation of land use and density of development; detailed land and site planning; control of outdoor advertising; careful attention to, and control of, earthmoving and landscaping; and careful attention to design and appearance of structures and equipment.

Some of the proposed projects in the RTP include countywide improvements to highways, arterials and transit systems. These improvements could potentially fall within a designated scenic corridor.

Mitigation Measures

All mitigation measures will be included in individual improvement project-level analysis, as appropriate. The implementation agency or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with mitigation measures.

- Avoid construction of transportation facilities in state and locally designated scenic highways and vista points; and

- If transportation facilities are constructed in state and locally designated scenic highways and/or vista points, design, construction, and operation of the transportation facility will be consistent with applicable guidelines and regulations for the preservation of scenic resources along the designated scenic highway.

Significance After Mitigation

This impact is considered significant and unavoidable because it is likely that there will be situations where visual impacts cannot be mitigated to a less than significant level.

Impact 3.1.3 – Visual Character Impacts

Construction and implementation of the projects could create significant contrasts with the overall visual character of the existing landscape setting. This could be a potentially significant impact.

There is an extraordinary range of urban characteristics and urban-natural environmental contrasts throughout the RTP Project area. Given the size and diversity of the region, there are no standards that apply to all areas. Therefore, local planning guidelines regarding visual quality of urban areas must be researched and adhered to. A component of the urban environment is the transportation infrastructure. Many roads have been built throughout the region, which connect urban concentrations with natural areas found in the rural area. Transportation systems have a major effect on the visual environment. As most vehicular movement occurs along transportation corridors, their placement largely determines what parts of the region will be seen. Arterials and freeways comprise a major component of the existing visual environment in the region.

Development of previously undeveloped sites could result in impacts to visual resources. Construction of a new transportation system through a developed area could result in land use changes that could also result in impacts to visual resources. For example, the extension of a highway through an urban area could require some acquisition of residential, commercial or industrial property, thereby changing the land use, and consequently, visual quality of the given area. "Modification projects" that involve the widening or upgrading of existing roadways can be designed to complement the existing system, and therefore, would involve lesser changes to the visual character of the existing landscape setting. Therefore, impacts from "modification projects" would be less than significant.

Mitigation Measure

All mitigation measures will be included in individual improvement project-level analysis, as appropriate. The implementation agency or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with mitigation measures.

- Develop design guidelines for each type of transportation facility that make elements of proposed facilities visually compatible with surrounding areas. Visual guidelines will, at a minimum, include setback buffers, landscaping, color, texture, signage, and lighting criteria. The following methods will be employed whenever possible:

  - Transportation systems will be designed in a manner where the surrounding landscape dominates;
  - Transportation systems will be developed to be compatible with the surrounding environment (i.e., colors and materials of construction material);
  - If exotic vegetation is used, it will be used as screening and landscaping that blends in and complements the natural landscape;
  - Trees bordering highways will remain or be replaced so that clear cutting is not evident; and
  - Grading will blend with the adjacent landforms and topography.

- Project implementation agencies shall design projects to minimize contrasts in scale and massing between the project and surrounding natural forms and development. Project implementation agencies shall design projects to minimize their intrusion into important viewsheds and use contour grading to better match surrounding terrain. To the maximum extent feasible, landscaping along highway corridors shall be designed to add significant natural elements and visual interest to soften the hard-edged, linear travel experience that would otherwise occur.

- Project implementation agencies shall use natural landscaping to minimize contrasts between the project and surrounding areas. Wherever possible, interchanges and transit lines shall be designed at the grade of the surrounding land to limit view blockage. Edges of major cut-and-fill slopes should be contoured to provide a more natural looking finished profile. Project implementation agencies shall replace and renew landscaping to the greatest extent possible along corridors with road widenings, interchange projects, and related improvements. New corridor landscaping shall be designed to respect existing natural and man-made features and to complement the dominant landscaping of surrounding areas.

- Project implementation agencies shall construct sound walls of materials whose color and texture complements the surrounding landscape and development and to the maximum extent feasible, use color, texture, and alternating facades to "break up" large facades and provide visual interest. Where there is room, project sponsors shall landscape the sound walls with plants that screen the sound wall, preferably with either native vegetation or landscaping that complements the dominant landscaping of surrounding areas.

Significance After Mitigation

This impact is considered significant and unavoidable, because it is likely that there will be situations where visual impacts cannot be mitigated to a less than significant level.

Impact 3.1.4 – Light and Glare Impacts

Construction and implementation of individual projects could potentially create a new source of substantial light or glare that would affect day or nighttime views of scenic resources as seen from the transportation facility or from the surrounding area. This could be a potentially significant impact.

There is an extraordinary range of urban characteristics and urban-natural environmental contrasts throughout the Project area. Given the size and diversity of the region, there are no standards that apply to all areas. Therefore, local planning guidelines regarding visual quality of urban areas must be researched and adhered to. Urban areas, due to numerous buildings in a concentrated space, experience significant light from all light source categories. Kern County includes various sized cities, and vast rural areas that are either located in the Valley region or are mountainous. The rural areas are primarily used for agricultural purposes. In smaller communities and in rural areas of the County, where urban development is less dense, light and glare impacts are not as frequent.

Mitigation Measure

All mitigation measures will be included in project-level analysis, as appropriate. The implementation agency or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with mitigation measures.

Cumulative Impacts 3.1.5

Kern County will experience significant growth and development by 2035. The 2011 RTP influences the pattern of this development, by increasing mobility and including transportation measures. At the regional scale, the 2011 RTP's contribution to impacts on the overall visual character of the existing landscape setting would be cumulatively significant.

The 2011 RTP includes land use policies that would affect the regional distribution of population, households, employment, and facilities and could impact aesthetics and views. The primary land use strategy discussed in the 2011 RTP emphasizes focusing development in accordance with applicable general plans, or infill development. Infill may result in taller buildings that obstruct views. However, an infill strategy will also help preserve open space in the region, thereby protecting many scenic resources.

The region will add increase in population and employment by 2035. Some of these people will live in households and work at jobs on land that is currently vacant. This conversion of vacant land to residential or other uses would have a significant impact on aesthetics and views. As a result of the population growth expected to occur in the region over the next 25 years, contrasts with existing visual character will occur either due to increased land use intensity in urban areas or due to development of previously vacant lands. Although implementation of mitigation measures would reduce potential cumulative impacts, the impacts would be considered cumulatively considerable.

Mitigation Measures

- Mitigation measures identified above should also be implemented as applicable to development projects throughout the region.

- In visually sensitive site areas and prior to project approval, local land use agencies shall apply development standards and guidelines to maintain compatibility with surrounding natural areas, including site coverage, building height and massing, building materials and color, landscaping, site grading, etc.

- Local agencies should develop design guidelines for each type of transportation facility that make light elements of proposed facilities visually compatible with surrounding areas. The following methods will be employed whenever possible:
  - Transportation systems will be designed in a manner where the surrounding landscape dominates;
  - Transportation systems will be developed to be compatible with the surrounding environment; and
  - Lighting devices will be employed such as downward facing light, light shields, and amber lumens.

Significance After Mitigation

This impact is considered significant and unavoidable because it is likely that there will be situations where visual impacts cannot be mitigated to a less than significant level.

Agricultural Resources

Impact 3.2.1

Strategies aimed at addressing the transportation needs of future growth patterns were considered during development of the proposed RTP. The document promotes alternatives to the automobile through enhanced funding for transit and other alternative modes of transportation such as bicycle facilities, trails, airport improvements, and others. Implementation of strategies proposed in the RTP could result in positive changes to land uses. This would be considered a beneficial impact.

Implementation of transit improvements included in the Plan could influence land use patterns throughout the region. Land use and transportation policies are emphasized in the RTP in order to address automobile traffic and air quality concerns. Growth patterns that promote alternatives to the automobile by creating mixed-use developments, which would include residences, shops, parks, and civic institutions, linked to pedestrian-and-bicycle friendly public transportation centers, are also discussed in the 2011 RTP. Design features, such as improved street connectivity, public amenities, and a concentration of residences and jobs in proximity to transit routes could be incorporated into mixed-use developments; therefore, addressing automobile traffic and air quality concerns. Implementation of enhanced alternative modes as provided by the RTP could result in more balanced land use conditions throughout the region, as the mixed-use developments would result in a concentration of jobs and residences in close proximity to one another.

While the RTP is likely to result in a positive outcome related to supportive land use conditions for alternative forms of transportation such as transit, other projects in the Plan could have significant impacts on land use patterns, potentially causing land use growth and development to occur in areas not previously envisioned for growth and development. This impact could be especially significant on agricultural land uses within the County.

Mitigation Measures

The impact on significant agricultural resources will be evaluated as part of the appropriate improvement project-specific environmental review. Mitigation measures will be identified to minimize impacts. Implementation agencies will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with all mitigation measures.

- Individual projects will be consistent with local land use plans and policies that designate areas for urban land use and preserve agricultural lands that support the economic viability of agricultural activities; and

- Prior to final approval of each individual improvement project, the implementing agency will conduct the appropriate project-specific environmental review, including consideration of potential land use impacts.

Significance After Mitigation

While implementation and monitoring of the above mitigation measures will provide the framework and direction for subsequent project-specific mitigation designed to avoid or reduce the identified significant Project impacts, it is probable that such impacts will remain significant and unavoidable.

Impact 3.2.2

Implementation of the proposed Project could potentially result in the disturbance or loss of significant agricultural resources throughout the Kern region. This would be considered a potentially significant impact.

The Kern region contains areas designated by the state as Prime Farmland, Unique Farmland, and Farmland of Statewide Importance. These areas are interspersed throughout urban areas or are located in undeveloped portions of the region.

Development of proposed projects could potentially result in the disturbance or loss of some of these designated areas. Specifically, new projects involving construction would be most likely to result in impacts to these areas.

Mitigation Measures

The impact on significant agricultural resources will be evaluated as part of the appropriate project-specific environmental review. Mitigation measures will be identified to minimize impacts. Implementation agencies will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with all mitigation measures.

- Individual projects will be consistent with federal, state, and local policies that preserve agricultural lands and support the economic viability of agricultural activities, as well as policies that provide compensation for property owners if preservation is not feasible;

- For projects in agricultural areas, implementation agencies will contact the California Department of Conservation and the Agricultural Commissioner's office to identify the location of prime farmlands and lands that support crops considered valuable to the local or regional economy;

- Prior to final approval of each individual improvement project, the implementing agency will establish conservation easement programs to mitigate impacts to prime farmland;

- Prior to final approval of each individual improvement project, the implementing agency will avoid impacts to prime farmlands or farmlands that support crops considered valuable to the local or regional economy; and

- Prior to final approval of each individual improvement project, the implementing agency will encourage enrollments of agricultural lands for counties that have Williamson Act programs.

Significance After Mitigation

Implementation and monitoring of the above mitigation measures will provide the framework and direction for subsequent individual improvement project-specific mitigation designed to avoid or reduce the identified significant Project impacts to a less than significant level.

Air Quality

Short-Term Construction Impacts

Impact 3.3.1

Construction activities would increase short-term air emissions. This would be considered a less than significant impact.

Short-term impacts result from the following construction-related sources:

- Construction equipment emissions;
- Dust from grading and earthmoving operations; and
- Emissions from workers' vehicles traveling to and from construction sites.

As individual transportation improvements are constructed, the activity at individual construction sites will involve grading and other earth-moving operations and the use of diesel and gasoline-powered construction equipment. These generate exhaust emissions of carbon monoxide and nitrogen dioxide at the individual construction sites. Where asphalt is used, volatile organic compounds (VOC) will be released from asphalt when it is applied to roadway surfaces. If an individual construction site is located near existing homes or other sensitive receptors, such emissions could have the potential to result in significant short-term impacts at that particular location.

The District has developed thresholds of significance for individual construction projects. Individual improvement project-level analysis conducted for CEQA purposes would estimate construction emissions for each individual improvement project based on the equipment used, vehicle miles traveled, and time allowed to complete the project. Mitigation measures to reduce air quality impacts would be established in individual improvement project-specific environmental documents. However, some of the larger projects could have the potential to exceed the significance thresholds established by the District, creating significant short-term impacts. These impacts would occur in localized areas depending on the construction site locations.

Since the Project proposes more highway and arterial projects than the No Project Alternative, short-term construction emissions would be greater. However, construction-related impacts are expected to be temporary in nature and can generally be reduced to a less than significant level through the use of mitigation measures and through compliance with applicable existing city, county, state, and District regulations for reducing construction-related emissions. Therefore, the increase in construction activities proposed by the Project is expected to constitute a less than significant impact on a programmatic level. Nonetheless, individual projects may exceed the emissions thresholds, which would constitute a project-level significant impact. Individual projects would be required to implement mitigation measures to reduce construction emissions.

Mitigation Measures

All mitigation measures will be included in project-level analysis, as appropriate. The individual improvement project proponent or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with mitigation measures.

- Implementation agencies will ensure implementation of mitigation measures to reduce PM_{10}, $PM_{2.5}$, and NOx emissions from construction sites, including:

- Maintain on-site truck loading zones;
- Configure on-site construction parking to minimize traffic interference and to ensure emergency vehicle access;
- Provide temporary traffic control during all phases of construction activities to improve traffic flow;
- Use best efforts to minimize truck idling to not more than two minutes during construction;
- Apply non-toxic soil stabilizers (according to manufacturers' specifications) to all inactive construction areas;
- During construction, replace ground cover in disturbed areas as quickly as possible;
- During construction, enclose, cover, water twice daily or apply non-toxic soil binders (according to manufacturers' specifications) to exposed piles with five percent (5%) or greater silt content and to all unpaved parking or staging areas or unpaved road surfaces;
- During the period of construction, install wheel washers where vehicles enter and exit unpaved roads onto paved roads, or wash off trucks and any equipment leaving the site each trip;
- During the period of construction, assure that traffic speeds on all unpaved roads be reduced to fifteen (15) mph or less;
- Pave all construction access roads at least 100 feet on to the site from permanent roadways; and
- Cover all haul trucks.

- Implementation agencies will avoid improvement project designs requiring significant amounts of material, such as excavated soil and construction debris, to be transported from the site to disposal facilities. Construction sites will employ a balanced cut/fill ratio to the extent possible, thus reducing haul-truck trip emissions.

Significance After Mitigation

Less than significant.

Impact 3.3.2

Traffic conditions at some individual locations may lead to occasional localized carbon monoxide concentrations.

The proposed Project will improve traffic flows and reduce congestion system-wide, reducing the potential for carbon monoxide "hot spots" that can occur from exhaust of idling cars waiting to clear a heavily congested intersection or crossing. The Project is intended to reduce congested conditions throughout the system that is faced with a challenge to accommodate additional traffic generated by projected population. While the proposed improvements will respond to this challenge by accommodating additional traffic and reducing congestion (brought by that additional traffic) system-wide, exhaust emissions from cars at localized areas may, at certain times, create a potential for carbon monoxide concentrations, or hot spots, to develop under adverse atmospheric conditions that prevent a rapid dispersion of carbon monoxide. Currently, the Air Basin is in attainment of federal and state standards for carbon monoxide, and the carbon monoxide emissions are not a serious problem in the Basin. Nonetheless, because there is a potential for exhaust emissions from cars at localized areas to create an occasional hot spot, the following mitigation measure is proposed.

Mitigation Measure

- At those facilities or intersections near sensitive receptors where carbon monoxide concentrations may exist, the implementing agency will reduce or alleviate these concentrations by improving traffic flows through improved signalization, restriping, addition of traffic lanes, and other improvements identified as part of the environmental review of an individual improvement project.

Significance After Mitigation

The Project will result in beneficial effects of system-wide improvement in traffic flows and reduced congestion, which would reduce the potential for forming carbon monoxide hot spots. At some locations where instances of congested conditions may occur near sensitive receptors, implementation of identified mitigation is anticipated to ensure improved traffic flows such that the potential for creating a hot spot will be reduced to a less than significant level.

Long-Term Impacts

Impact 3.3.3 – Emission Impacts

Emissions impacts related to the Project are not considered to be significant. Tables 3-8A and 3-8B identify air quality conformity analysis results for the SJVAB portion of Kern County including the projected emissions of hydrocarbons, nitrogen oxides, carbon monoxide, volatile organic gases, and particulate emissions for the Project compared with the base or the emissions budgets for various years. The analysis shows that Project emissions do not exceed the base and budget thresholds established by EPA. The analysis conducted to determine the emissions estimates versus budgets is for purposes of determining the environmental impacts of the Project. As a result, the information presented in the following tables is not representative of an official conformity run or finding. The analysis provided uses the most recent available assumptions and the most recently agreed upon methodology for preparing a conform analysis within the region. While the Project meets conformity requirements, previous Conformity Findings require the implementation of TCMs to eventually result in improved air quality within the Valley. Table 3-8C provides analysis results for the Mojave Air Basin portion of Kern County.

Mitigation Measure

- The various TCMs that have been incorporated into the Air District AQAP, ROP Plans, and the SJVAPCD TCM Program, or have been identified as necessary to provide for positive air quality conformity findings, as referenced in the latest Air Quality Conformity Findings for the 2011 RTP and other plans and programs.

Significance After Mitigation

The Project will result in beneficial effects of system-wide improvement in traffic flows and reduced congestion, which would reduce the potential for increased air emissions. While TCMs have been identified in the Air Quality Conformity Findings, the TCMs will not result in attainment of all pollutants over time or by the year 2035. As a result, long-term emission impacts cannot be reduced to a less than significant level.

Biotic Resources

Impact 3.4.1 – Construction Impacts

The Project includes individual improvement projects that may result in direct removal or degradation of riparian habitat or other sensitive natural communities during construction activities such as grading and grubbing.

Mitigation Measures

All mitigation measures will be included in subsequent individual improvement project-level environmental analysis as appropriate. The individual improvement project proponent or local jurisdiction will be responsible for compliance with the mitigation measures during all phases of construction as appropriate. Kern COG will be provided with documentation of compliance with mitigation measures.

- Construction and operational Best Management Practices (BMPs) will be identified, installed and maintained in order to prevent silt and other pollutants from entering jurisdictional waters and wetlands thereby degrading or destroying wildlife and/or natural habitat. BMPs may include straw bales and/or mats, temporary sedimentation basins, silt fence, sand bag check dams, dry season construction, etc;

- Native soils in construction areas will be removed, stockpiled separately, and replaced in those areas where onsite revegetation of the native habitat is planned;

- Any disturbed natural areas will be replanted with appropriate native vegetation following the completion of construction activities;

- During the individual improvement project design phase, impacts to jurisdictional waters and wetlands will be minimized to the greatest extent feasible and

- Individual improvement project proponents will obtain and comply with appropriate regulatory requirements prior to construction.

Significance After Mitigation

These mitigation measures would require individual improvement project proponents to avoid or mitigate impacts to sensitive habitat including jurisdictional waters and wetlands. However, due to the size and potentially large number of resources that could be disturbed as a result of the 2011 RTP, impacts to these resources would remain a potentially significant impact at a regional level.

Impact 3.4.2 – Direct Plant and Wildlife Impacts

The Project includes improvements that may result in direct impacts to plant and wildlife species including rare, threatened and/or endangered species during construction and operation of the proposed transportation facilities through the removal of native habitat.

Mitigation Measures

All mitigation measures will be included in subsequent individual improvement project-level environmental analysis as appropriate. The individual improvement project proponent or local jurisdiction will be responsible for compliance with the mitigation measures during all phases of construction as appropriate. Kern COG will be provided with documentation of compliance with mitigation measures.

- Each proposed individual improvement project will consider the displacement of sensitive habitat, sensitive species, and non-native habitat during the individual improvement project design phase.

- When avoidance of native vegetation removal is not possible, each transportation project shall replant disturbed areas with commensurate native vegetation of high habitat value adjacent to the project (i.e. as opposed to ornamental vegetation with relatively less habitat value).

- Focused sensitive plant and wildlife species and non-native habitat surveys will be conducted within suitable habitat to determine the distribution of sensitive species within the biological impact area of the proposed transportation improvement project. Sensitive plant and non-native habitat surveys will be conducted during the appropriate flowering season for sensitive plant species with the potential to occur within the individual improvement project area. In all cases, impacts on special status species and/or their habitat shall be avoided during construction to the extent feasible.

- If sensitive plant or wildlife species and non-native habitat are identified within the biological impact area, a Biological Resource Management Plan (BRMP) will be developed to address appropriate avoidance and minimization measures. These measures may include seed collection and salvage measures for sensitive plant species and non-native habitat, silt fencing, exclusion fencing and/or appropriate compensation where impacts cannot be fully avoided.

- Individual transportation projects shall include offsite habitat enhancement or restoration to compensate for unavoidable habitat losses from the project site.

- Locations of sensitive species, sensitive habitat, and non-native habitat will be mapped and shown on construction drawings and identified as Environmentally Sensitive Areas (ESAs). Prior to construction, these areas will be flagged and/or fenced to prevent unnecessary impacts from machinery and foot traffic.

- Temporary access roads and staging areas will not be located within areas containing sensitive plant, sensitive wildlife species or non-native habitat wherever feasible, so as to avoid or minimize impacts to these species.

- Construction activities will be scheduled, as appropriate and feasible, to avoid sensitive times that have a greater likelihood to affect significant resources such as spawning periods for fish, nesting season for birds and/or the rainy season for riparian habitat and sediment/erosion control.

- All vegetation (including tall grasses) will be removed between August 16 and February 14, if possible, to avoid potential conflicts with nesting birds. If it is not possible to remove vegetation during that time frame, a nest clearance survey will be completed prior to vegetation clearing. Any detected nests will be mapped and provided with an appropriate buffer as recommended by a qualified biologist. Construction activities within the buffer area will not be allowed until after September 15 or until fledglings have abandoned the nest.

- A Worker Awareness Program (environmental education) shall be developed and implemented to inform project workers of their responsibilities in regards to avoiding and minimizing impacts on sensitive biological resources.

- An Environmental Inspector shall be appointed to serve as a contact for issues that may arise concerning implementation of mitigation measures, and to document and report on adherence to these measures.

- A qualified wetland scientist shall review construction drawings as part of each project-specific environmental analysis to determine whether wetlands will be impacted, and if necessary perform a formal wetland delineation. Appropriate state and federal permits shall be obtained, but each project EIR will contain language clearly stating the provisions of such permits, including avoidance measures, restoration procedures, and in the case of permanent impacts compensatory creation or enhancement measures to ensure a no net loss of wetland extent or function and values.

- Sensitive habitats (native vegetative communities identified as rare and/or sensitive by the CDFG) and special-status plant species (including vernal pools) impacted by projects shall be restored and augmented, if impacts are temporary, at a 1.1:1 ratio (compensation acres to impacted acres). Permanent impacts shall be compensated for by creating or restoring habitats at a 3:1 ratio as close as possible to the site of the impact.

- When work is conducted in identified sensitive habitat areas and/or areas of intact native vegetation, construction protocols shall require the salvage of perennial plants and the salvage and stockpile of topsoil (the surface material from 6 to 12 inches deep) and shall be used in restoring native vegetation to all areas of temporary disturbance within the project area.

- If specific project area trees are designated as “Landmark Trees” or “Heritage Trees”, then approval for removals shall be obtained through the appropriate entity, and appropriate mitigation measures shall be developed at that time, to ensure that the trees are replaced. Due to the close proximity of these areas to sensitive wildlife habitats, all mitigation trees will use only locally-collected native species.

- Use resource data to inform transportation decision-making.

- Use watershed, conservation, and recovery plans to identify important environmental considerations for the Kern COG region, such as critical wildlife corridors, the most important areas to protect for sensitive species, and areas with a high concentration of resources.

- Give conservation plans as much weight as General Plans when planning transportation investments.

- Incorporate concepts such as 100 to 200 foot buffers for stream corridors, and identification and improvement of priority culverts that currently restrict wildlife corridors and natural processes of stream and river systems.

- Use parcel maps to identify larger, undivided parcels for ease of acquisition and preservation, and designate areas as potential future mitigation sites.

- Consider the resource, “Eco-logical: An Ecosystem Approach to Developing Infrastructure Projects” (2006) which encourages Federal, State, Tribal and Local partners involved in the infrastructure planning, design, review, and construction to use flexibility in regulatory processes.
- Identify financial mechanisms to fund mitigation, such as development fees, sales tax, or the use of funds from alternative methods to identify and protect critical resource areas.

- Establish conservation easements that connect to and expand existing conservation areas.

- Describe locally-developed measures such as designated open space, measures requiring development set-backs near streams, etc.

- The following list of data resources should be referenced during development of biotic plans and studies for transportation improvement projects:

  - U.S. Fish & Wildlife Service species recovery plans;
  - USDA Natural Resources Conservation Service wetland data;
  - Nature Conservancy data and regional planning documents;
  - California Department of Fish and Game Natural Diversity Database; and
  - Local non-profit and land trust group information.

Significance After Mitigation

This impact would likely be significant if the proposed individual improvement project occurs within or near known populations of sensitive plant and wildlife species, or within designated critical habitat for federal or state listed species. These mitigation measures would require individual improvement project proponents to avoid or mitigate impacts to sensitive plant and wildlife species. However, due to the size and potentially large number of resources that could be disturbed as a result of the Individual improvement project, impacts to these resources would remain a potentially significant impact at a regional level.

Impact 3.4.3 – Indirect Impacts

The Project includes improvements that may result in indirect impacts to plant and wildlife species including rare, threatened and/or endangered species during the construction and operation through edge effects such as noise, lighting and visual deterrents.

Mitigation Measures

All mitigation measures will be included in subsequent individual improvement project-level environmental analysis as appropriate. The individual improvement project proponent or local jurisdiction will be responsible for compliance with the mitigation measures during all phases of construction as appropriate. Kern COG will be provided with documentation of compliance with mitigation measures.

The height, spacing, number and type of light fixtures will be selected and installed to minimize intrusive light escaping from the physical boundaries of the site.

- Road noise minimization methods such as native brush and tree planting adjacent to heavy noise producing transportation facilities or will be incorporated where feasible.

Significance After Mitigation

This impact would likely be significant if the proposed individual improvement project occurs within or near known populations of sensitive plant and wildlife species, or within designated critical habitat for federal or state listed species. These mitigation measures would require individual improvement project proponents to avoid or mitigate impacts to sensitive plant and wildlife species. However, due to the size and potentially large number of resources that could be disturbed as a result of the Project, impacts to these resources would remain a potentially significant impact at a regional level.

Impact 3.4.4 – Temporary and Permanent Impacts

The Project includes individual improvement projects that would result in temporary and permanent impacts to

terrestrial and aquatic wildlife movement.

The linear nature of transportation projects increases the potential extent and significance of impacts to wildlife movement. Transportation facilities pose barriers to wildlife crossings that may result in injury of death of wildlife attempting to traverse the facility. These barriers also result in fragmentation of natural habitat and increased impacts associated with edge effects from lighting, noise, human disturbance, exotic plant infestations, urban runoff, etc. Smaller fragments of habitat result in greater intensity of the edge effects. It is also important to maintain connections between populations of wildlife so that interbreeding, which results and/or that young have no ability to disperse to suitable habitats, does not occur. Impacts to wildlife movement would be greater along entirely new transportation facilities than with improvements to existing facilities, because the existing facility has already formed a barrier and the addition of new lanes for example, may only slightly increase the barrier effect.

Mitigation Measures

All mitigation measures will be included in subsequent individual improvement project-level environmental analysis as appropriate. The individual improvement project proponent or local jurisdiction will be responsible for compliance with the mitigation measures during all phases of construction as appropriate. Kern COG will be provided with documentation of compliance with mitigation measures.

- During final design, implementing agencies, will design, construct, and maintain terrestrial wildlife crossings in order to minimize barrier effects and habitat fragmentation created by the transportation improvement project.

- During final design, implementing agencies, will design, construct, and maintain any structure/culvert placed within a stream where endangered or threatened fish occur/may occur. The structure/culvert will not constitute a barrier to upstream or downstream movement of aquatic life, or cause an avoidance reaction by fish that impedes their upstream or downstream movement. This includes, but is not limited to, the supply of water at an appropriate depth for fish migration.

Significance After Mitigation

These mitigation measures would require individual improvement project proponents to avoid or mitigate impacts to wildlife movement. However, due to the size and potentially large number of movement corridors that could be disturbed as a result of the Project, impacts to these resources would remain a potentially significant impact at a regional level.

Impact 3.4.5 – Conflicts with HCP, NCCP or Other HCP Impacts

The Project includes individual improvement projects that potentially conflict with an adopted HCP, NCCP or other approved local, regional or state HCP.

Mitigation Measure

All mitigation measures will be included in subsequent individual improvement project-level environmental analysis as appropriate. The individual improvement project proponent or local jurisdiction will be responsible for compliance with the mitigation measures during all phases of construction as appropriate. Kern COG will be provided with documentation of compliance with mitigation measures.

- Construction and operation of the proposed transportation individual improvement project will comply with the requirements of all adopted HCPs and other preserved areas.

Significance After Mitigation

With the incorporation of the mitigation measure listed above, this impact would be less than significant.

Impact 3.4.6 – Increased Siltation Impacts

The 2011 RTP would potentially increase siltation of streams and other water resources from exposures of erodible soils during construction activities. Excessive siltation can significantly degrade habitat for fish and other aquatic organisms. Heavy sediment deposition can bury slow-moving or sessile bottom-dwelling organisms, fish eggs and larval forms of many aquatic organisms. These losses are not only of direct concern, but also represent a loss of food sources for larger fishes and other organisms, such as birds and mammals, that are not directly affected by sediments.

Increased sediment can also decrease light penetration for aquatic plant production and increase water temperature from greater insulation. Higher water temperatures can affect aquatic organisms through direct stress of temperature-sensitive organisms (e.g., steelhead require cold water streams), and by increasing nitrate productivity which can exacerbate eutrophication if the sediments contain or are accompanied by excessive nutrients (i.e., algal blooms). The degree of this impact would depend on several factors including the following:

- *Length of occurrence.* The longer the period of sedimentation, the greater the potential for significance.
- *Timing of occurrence*. The effect would be of greater significance during particularly sensitive times of year, such as during fish spawning seasons when the eggs and larvae which are particularly sensitive to siltation would be present; and,
- *Significance of Resource.* The effect would be of greater significance where a special status species might be affected, such as near a steelhead spawning stream.

This impact would be significant.

Mitigation Measures

- Individual projects near water resources shall implement Best Management Practices (BMPs) at construction sites to minimize erosion and sediment transport from the area. BMPs include encouraging growth of vegetation in disturbed areas, using straw bales or other silt-catching devices, and using settling basins to minimize soil transport.

- Individual projects shall schedule construction activities to avoid sensitive times for biological resources (e.g. steelhead spawning periods during the winter and spring) and to avoid the rainy season when erosion and sediment transport is increased.

Significance After Mitigation

Full implementation of each of these mitigation measures would not avoid the siltation impacts. The impact remains significant.

Cumulative Impacts 3.4.7

Growth and development in Kern County will increase substantially by 2035. The 2011 RTP, by increasing mobility and including transportation measures, influences the pattern of this growth and development. The 2011 RTP's influence on growth potentially contributes to following regional cumulatively considerable impacts:

- Displacement of natural vegetation,
- Damage to sensitive species habitat,
- Habitat fragmentation,
- Impacts to riparian and wetland habitats,
- Construction and operational disturbances, and
- Siltation.

The amount of new developed acreage (consuming previously vacant land) would be considerable. This degree of development is reasonably foreseeable; however, to assign this future development to precise locations would be speculative, such that it cannot be estimated which natural vegetation communities would be affected. Despite the inability to predict the acreage of each habitat type that may be affected, it is reasonable to expect that this future development would contribute to the same types (although on a larger scale) of impacts detailed in Impacts 3.4.1 through 3.4.6 above.

These indirect impacts on biological resources are associated with population, employment, and household growth forecast by Kern COG, and they are considered a significant cumulative impact.

Mitigation Measures

The cumulative impacts to biological resources, due to the forecast urban development associated with the 2011 RTP, would be mitigated using the same measures detailed for Impacts 3.4.1 through 3.4.6, in addition to the following measure:

- Future impacts to biotic resources shall be minimized through cooperation and information sharing between the implementation agency and affected resource agencies.

Significance After Mitigation

The impacts to biotic resources due to regional scale growth would be reduced through application of the mitigation measures, however implementation of the 2011 RTP's transportation improvement projects to accommodate growth and development in Kern County (as reflected in adopted local agency general plans) would contribute to biotic resource impacts. Impacts to biotic resources from the 2011 RTP would be cumulatively considerable.

Climate Change

Impact 3.5.1 - Increased Transportation GHG Emissions May Cause Climate Change

The ultimate sources of increased transportation emissions in Kern County are population and employment growth, which will increase with or without projects referenced in the 2011 RTP. Kern COG does not implement land use policy in Kern County; rather, this is under the jurisdiction of the County and the various cities. Decisions about the place, pace, and scale of growth and development are reflected in the general plans and project approvals adopted by the local agencies. The 2011 RTP is designed to complement, rather than change, the plans adopted by the local agencies. Thus, the ultimate effect of the 2011 RTP on transportation emissions is not to increase the amount of travel per se, but rather to influence where and how travel occurs within and through the County.

Impact 3.5.2 - Cumulative GHG Emission Impact

It is possible that local transportation GHG emissions within Kern County, when combined with emissions throughout California and the world, might contribute to climate change. Based upon analysis conducted by the IPCC, climate change is a significant cumulative impact, given the ramifications for air quality, climate, public health, water resources, flooding, sea level, agricultural productivity, and biological resources, among other potential effects. However, no agreed-upon methodology is currently available under CEQA to adequately identify when project-level GHG emissions contribute considerably to this significant cumulative impact.

Also, the ultimate sources of increased transportation emissions in Kern County are population and employment growth, which will increase with or without projects included in the 2011 RTP. Kern COG does not implement land use policy in Kern County; rather, this is under the jurisdiction of the County and the various cities. As such, decisions about the place, pace, and scale of growth and development are reflected in local agency general plans and project approvals approved by those agencies. The 2011 RTP is designed to complement, rather than change the plans adopted at the County and city levels. Thus, the ultimate effect of the 2011 RTP on transportation emissions is not to increase the amount of travel per se, but rather to influence where and how travel occurs within the County. Thus, comparison of emissions between what exists today and what would exist in 2035 with the 2011 RTP is not a true measure of the effect of the project on GHG emissions. A better identification of the effect of the project is to compare the emissions potential with the project against the No-Project Alternative as well as other alternatives. As previously noted, the proposed project would result in lower emissions of criteria pollutants than the No-Project Alternative.

Mitigation Measures

The ultimate sources of increased transportation emissions in Kern County are population and employment growth, which will increase with or without projects referenced in the 2011 RTP. Kern COG does not implement land use policy in Kern County; rather, this is under the jurisdiction of the County and the various cities. Decisions about the place, pace, and scale of growth and development are reflected in the general plans and project approvals adopted by the local agencies. The 2011 RTP is designed to complement, rather than change, the plans adopted by the local agencies. Thus, the ultimate effect of the 2011 RTP on transportation emissions is not to increase the amount of travel per se, but rather to influence where and how travel occurs within and through the County.

As of the writing of this Draft Subsequent EIR, the agencies with jurisdiction over air quality regulation and GHG emissions (CARB and the San Joaquin Valley Air Pollution Control District) have not established regulations, guidance, methodologies, significance thresholds, standards, CEQA protocols or mitigation measures that specify the type of analysis, or mitigation measures, that can be included in a program EIR, or other CEQA document. In addition, no emission inventories or emission baselines have been established that would allow for an appropriate analysis to evaluate an existing setting and impact analysis for the proposed implementation of the Kern County RTP

because of climate change. Kern COG adheres to the rules and guidelines currently in place at the local, State and federal level, and will adhere to any future regulations regarding global warming resulting from the legislative approval of AB 32 and AB 1493, when available.

A number of mitigation measures are included in Section 3.3 of the Draft EIR to address criteria emissions. Public transit has been enhanced in the 2011 RTP compared to the current RTP (adopted in 2007). Such improvements will help mitigate expected increases in emissions resulting from increased population and employment and the impact of planned growth and development on the regional transportation system. The RTP also includes references to a number of studies. The Plan contains a number of projects and significant funding for various forms of transportation in addition to streets and highways. Kern COG is in the process of developing a Regional Blueprint for the year 2050. Kern COG is coordinating development of the Blueprint with the other seven counties within the San Joaquin Valley. All eight counties are located in the same Air Basin (San Joaquin Valley Air Basin) and received the grant for Blueprint development from the State of California. The Blueprint programs in California are designed to address the three "E"s of Regional Blueprint Planning; that is, Energy Efficiency, the Environment, and Economic Development. The Regional Blueprint will identify a preferred land use scenario and transportation system for Kern County considering the application of alternative growth strategies. The Plan identifies a vision, values, goals, objectives, and implementing strategies that can be planned by Kern COG and implemented by local agencies within the County to reduce vehicle trips, vehicle miles traveled (VMT), and support increased walkability, passenger rail, public transit systems, and bicycling.

Further, public transit over the next 20 years has been enhanced in the 2011 RTP over existing conditions and even when compared to the current RTP (adopted in 2007). Such improvements will help mitigate expected increases in emissions resulting from increased population and employment and the impact of planned growth and development on the regional transportation system. Furthermore, the RTP includes references to a number of studies (some of which are described above). The Project improvements are expected to reduce VMT and vehicle trips and as a result, GHG emissions.

Kern COG cannot require that local agencies, Caltrans, the Air District or other agencies that use diesel-powered vehicles and equipment apply retrofit emission control devices, such as diesel oxidation catalysts and diesel particulate filters verified by CARB. Kern COG also cannot require that the same agencies use alternative forms of cement and asphalt that have lower GHG emissions. It is recommended however, that responsible agencies (local agencies, the Air District, Caltrans, and others) consider the implementation of such measures during individual project development and construction.

Both Kern COG and responsible agencies implementing projects outlined in the 2011 RTP will be required to adhere to any future applicable mandatory regulations regarding global warming resulting from the passage of AB 32 and AB 1493, but the exact character of such future implementing strategies is not known at this time. Kern COG and the local agencies will quantify GHG emissions consistent with Guidelines and requirements developed by CARB. Once the Guidelines are available, Kern COG will address GHG emissions and global warming impacts of projects contained in the 2011 RTP.

The following mitigation measures are intended to address regional and project-level impacts, as appropriate. For project-level impacts, the individual improvement project proponent or local jurisdiction will be responsible for ensuring adherence to the mitigation measures.

- <u>Transportation</u>

  - Work with member agencies to increase the number of Alternative Fuel Vehicles (AFV) in municipally owned vehicles;

- Funding retrofit, repower or replacement of diesel vehicles with funding from applicable federal, state and local sources;
- Encouragement of technology, such as electrification, to provide alternatives to operating the heating and air conditioning, refrigeration units while idling at distribution centers, warehouses, truck shops and other facilities where diesel trucks may reside overnight or for periods of several hours;
- Subsidize carpool and vanpool programs that originate in Kern County'
- Support efforts that further analyze GHG emission contributions from goods movement through transportation corridors, trucking and other relevant freight movement practices;
- Support the use of grants, loans and incentives to assist local governments with the implementation of climate change response activities and GHG reduction strategies;
- Support state legislation to provide incentive funds to local governments to develop and implement GHG reduction programs; and
- Support efforts that will enable cities and counties to purchase new vehicles for local fleets that conform to state purchasing standards, are fuel efficient, low emission or use alternative fuels.

- Land Use (Blueprint)

  - Develop land use patterns, which encourage people to walk, bicycle, or use public transit for a significant number of their daily trips;
    - Use circulation elements of general plans to ensure that development is consistent and well connected by alternative transportation modes (as required by AB 1358 effective January 1, 2011);
    - Adopt transit-oriented or pedestrian-oriented design strategies and select areas appropriate for these designs in the general plan;
    - Support higher density development in proximity to commonly used services and transportation facilities, such as transit centers;
    - Promote a balance of housing, shopping, and other amenities on the urban fringe and outlying communities that service strategic rural employment areas such as military bases, prisons, wind/alternative energy areas, oil production/mining, agriculture/ranching, food processing, warehouse distribution/intermodal centers, travel centers, recreation areas, etc.;
    - Promote affordable housing affordable relative to average wages in the community to reduce commute distances;
    - Promote reduced travel by providing electric vehicles, bike, pedestrian and equestrian paths and park-and-ride lots;
    - Promote phasing of new housing developments that reduce the need for long distance commutes to work and retail centers while construction is underway;
    - Provide subsidies for alternative transportation such as vanpools and transit until such time as ridership is at a level that supports the minimum transit fare box subsidy requirements;
    - In transit-oriented areas, provide for express transit or bus rapid transit service and circulator feeder systems. Service should plan for direct access to the Bakersfield High Speed Rail station;
    - In transit-oriented areas, reduce parking requirements and provide car/vanpool parking areas;
    - In transit oriented areas include a transit pass/subsidy as part of the housing rental agreement, commercial rent agreement, employer benefit package, or monthly housing payment of new developments to ensure that express transit service has sufficient ridership to meet the minimum fare box requirement. and
    - Space walkable/bikeable transit centers a minimum of 1 – 3 miles apart to ensure that travel times compete with passenger vehicle travel times.
  - In urban areas, develop in a compact, efficient form to reduce vehicle miles traveled and to improve the efficiency of alternatives to the automobile:
    - Use the control of public services to direct development to the most appropriate locations; and
    - Promote infill of vacant land and redevelopment sites.

- Encourage project site designs and subdivision street and lot designs that support walking, bicycling, and transit use:
  - Adopt design guidelines and standards promoting plans that encourage alternative transportation modes; and
  - Require certain sites to be created to allow convenient access by transit, bicycle, and walking.
- Accommodate projected population growth by identifying appropriate areas for urban and rural growth, economic development, and multi-modal transportation corridors that support smart growth principles;
- Promote 'downtowns' or 'urban centers' as the commercial, financial and social centers of communities. Promote higher density housing located adjacent to and within convenient walking distance to downtown, urban mixed use centers and/or transit corridors;
- Support and encourage policies and plans which direct growth to well planned neighborhoods and communities;
- Encourage the design and development of an effective transportation system that integrates all modes into a seamless, reliable, cost-efficient system, including intelligent transportation solutions and high tech communication options;
- Support intermodal travel including park-and-ride, rideshare, bicycle, rail and transit programs;
- Support increased mass transit connectivity and accessibility;
- Promote reduction of vehicle miles traveled;
- Promote the achievement and maintenance of State and Federal standards for air quality;
- Encourage General Plan, Community Plan and Specific Plan updates to include air quality elements, Greenhouse Gas Emission Reduction Plans and mitigation measures that reduce air pollution and vehicle miles traveled from existing and new development;
- Encourage the reduction of air pollution impacts from new developments;
- Help establish baseline GHG emission rates for municipalities; and
- Promote landscaping strategies that will reduce GHG.

- Energy

- Promote the use of LED technology or comparable energy-efficient technology for traffic lights, rail signals and other features compatible with LED or comparable energy-efficient technologies;
- Support the use of procurement practices that promote the use of energy efficient products and equipment;
- Support and coordinate efforts that address strategies to reduce greenhouse gases into planning efforts; and
- Promote energy efficiency, solar energy production and other methods of reducing GHG production.

- Emission Reduction Plan

- Prior to or in conjunction with the adoption of the proposed 2014 RTP, Kern COG and/or its member agencies will develop a GHG Emissions Reduction Plan that includes the following:
  - General discussion of the potential impacts that GCC poses to the Kern County region, with particular focus on potential impacts related to RTP facilities, to the extent that such information is available;
  - A baseline inventory of total GHG emissions directly and indirectly from transportation in the County that currently exist, and review of potential targets and timelines for achieving GHG reductions;
  - Development of feasible GHG emissions reduction measures and strategies to achieve reductions in RTP GHG emissions. Such reduction measures may include construction of new transportation projects, modification of existing facilities or services, incentive or funding programs, pricing strategies, regulations or any other actions that reduce GHG emissions associated with RTP activities; and
  - State protocols and GHG emissions inventory mechanisms are necessary tools to track and monitor GHG emissions at the local level. Kern COG and member agencies must determine, in cooperation with the state, the solutions that will best minimize its potential risks and maximize its potential benefits.

- Intelligent Transportation Systems

  - Develop an Intelligent Transportation Systems strategy to implement the Integrated Performance Management Systems Network that will:
    - Interconnect the region's local transportation management centers, including the use of cameras, and computer hardware and software to detect and clear accidents;
    - Use technology to improve traffic signal timing in order to optimize traffic flow and transit service; and
    - Involve new equipment to improve on-time transit performance and provide real-time transit information at stops and stations.

- Alternative Fuel Vehicle and Infrastructure Toolkit for Local Governments

  - Kern COG will develop an Alternative Fuel Vehicle (AFV) and Infrastructure Toolkit for member agencies that will contain best practices related to ordinances, analytical tools, financing opportunities, codes, and standards related to reducing GHG emissions. Kern COG will identify the alternative fuel vehicle(s) (e.g. neighborhood electric vehicles) and alternative fuel infrastructure with the potential to result in the greatest GHG emission reductions. Kern COG will conduct a public education program for local governments and other public agencies, as appropriate to encourage the use of alternative fuel vehicles and infrastructure; and
  - Kern COG will work with its member agencies to increase the number of AFVs (i.e., vehicles not powered strictly by gasoline or diesel fuel) both in municipally owned vehicles, as well as those owned by franchisees of these cities, such as trash haulers, green waste haulers, street sweepers, and curbside recyclable haulers. Such AFVs shall have GHG emissions at least 10 percent lower than comparable gasoline- or diesel-powered vehicles. The Alternative Fuel Vehicle and Infrastructure Toolkit described above will include best practices strategies to aid in the transformation of municipally owned or contracted fleets, including vehicle fleets operated and/or funded, at least in part by Kern COG.

- Transportation Pricing Policy (GET Long Range Transit Study)

  Kern COG will prepare an analysis on the impacts and the viability of using pricing policies with the transit system and selected portions of the road network to encourage people to drive less and use transit, walking, and bicycling modes more. This study will identify strategies to reduce GHG emissions that will include, but are not limited to, free or reduced transit fares during "spare the air" days; fare-free zones on the transit system; transit vouchers; days on which transit is free; congestion pricing options for portions of the road system, such as tolls on freeways and highways; and congestion-pricing to enter certain high-traffic areas served by public transit (e.g. downtown areas). Kern COG shall adopt a transportation pricing policy based upon these strategies, and shall conduct seminars with local government staff, planning commissioners and elected officials and members of the private development, planning, engineering and design communities to disseminate these strategies.

- Public Education Program on Individual Transportation Behavior and Climate Change

  In conjunction with key partners such as local air districts, public utility providers, area chambers of commerce and others, Kern COG will create a public information program to educate the public about the connection between individual transportation behavior and global climate change, including transportation behavior modifications the public can make to reduce their GHG emissions over time. Kern COG shall include information on its website that is focused on global climate change. The website shall identify actions the public can take to reduce their carbon footprint, and provide web links to sources of information designed to promote alternative mode use (carpools, vanpools, public transit, bicycling, walking, telecommuting) and other travel demand management strategies.

- Workshop on Global Climate Change for Local Government Officials and Create GHG Emissions Reduction Strategies Toolkit

  - Kern COG will provide funding for a workshop on global climate change for local government officials that will focus on practical techniques that local governments can implement to reduce greenhouse gas emissions at the city and county level. Workshop topics shall include, but are not limited to the following:
    - The basic science behind climate change and its effects on the Kern County Region;
    - Addressing the California Environmental Quality Act (CEQA) and the effects of AB 32;
    - What cities and counties are doing to address climate change and CEQA;
    - Cost effective actions cities can take to reduce greenhouse emissions; and
    - Actions being taken in the Kern County area to advance and support innovative "green" business.

  - Kern Cog in conjunction with other key partners, shall produce a toolkit for local governments to use to take effective actions to reduce greenhouse gas emissions over time. The toolkit will incorporate recommendations by the workshop participants to identify which issues are important for the region and the tools and resources they would like to have available to reduce greenhouse emissions .

- Establish a Baseline for Kern's Own GHG Impacts

  - Starting in calendar year 2011, Kern COG shall measure and record the GHG emissions associated with its own operations in an accurate manner and in a format consistent with the California Climate Action Registry's own reporting protocol in order to establish a baseline against which any future GHG reductions may be applied. The report shall be independently audited by a State and Registry approved certifier. The report shall include the following elements:
    - Indirect emissions from electricity and natural gas use;
    - Direct emissions from mobile source combustion (agency vehicles);
    - Indirect emissions from business-related employee air travel;
    - Direct and Indirect emissions from employee commuting; and
    - Indirect emissions associated with Kern COG purchasing practices.

  - Kern COG shall continue to report on its own GHG emissions consistent with this format in subsequent years and track its progress in reducing emissions.

- Project level environmental documents shall analyze construction and maintenance Greenhouse Gas (GHG) emissions.

Significance After Mitigation

Implementation and monitoring of the above mitigation measures will provide the framework and direction for subsequent regional program-specific and individual improvement project-specific mitigation designed to avoid or reduce the identified significant Project impacts to a less than significant level; however, it is unlikely that mitigation measures would reduce GHG emissions below existing conditions (let alone to 1990 levels as required by AB 32) due to anticipated population growth. As such, significant and unavoidable impact s on global warming will occur.

Cultural Resources

3.6.1 Impacts – Cultural and Historic Resources

Cultural resources may be encountered during development of projects proposed in the 2011 RTP. These resources may include, but are not limited to, prehistoric and historical archaeological sites, paleontological sites, historical buildings, and structures associated with agriculture, mining, and petroleum development. Properties important to Native American communities and other ethnic groups, including tangible properties possessing intangible traditional cultural values, also may be present. Such resources may exist individually, in groupings of modest size, or in districts covering substantial geographies.

Cultural resources are most likely to be impacted by construction of new highways or widening or realignment of existing roadways. Bridge replacements or crossings, interchange improvements, new right-of-way acquisition, and other types of projects that involve ground disturbance might also impact cultural resources. Projects associated with transportation system operations or maintenance, such as pavement maintenance and installation or replacement of signals, are less likely to impact cultural resources. Since the specific rights-of-way and alignments of many proposed projects have not been finalized, and other requirements are unknown at present, individual improvement project-specific records searches, background research, and field studies were not performed for this SEIR. To comply with state and federal law, however, such studies must be undertaken in subsequent and individual improvement project EIRs/EISs to identify individual improvement project-specific direct and indirect impacts and develop appropriate mitigation measures. General procedures for accomplishing these objectives, and likely avenues for mitigation of potential individual improvement project impacts, are the subject of this SEIR.

Direct impacts can be assessed by identifying the types and locations of proposed development, determining the exact locations of cultural resources within the individual improvement project area, assessing the significance of the resources that may be affected, and determining the nature of individual improvement project effects on significant resources. Appropriate impact mitigation will be based on the nature of the resources, their locations vis-à-vis the individual improvement project, and the extent of impacts.

Indirect impacts result primarily from the effects of Project-induced population growth. Such growth can result in increased construction as well as increased recreational activities that can disturb or destroy cultural resources. Due to their nature, indirect impacts are much harder to assess and quantify.

Mitigation Measures

Individual improvement project-specific impacts on cultural resources will be identified at the earliest planning stages of the individual improvement project. Since avoidance is the preferred means for mitigating impacts on cultural resources, cultural resource specialists should be included on the individual improvement project planning teams and records searches, background research, Native American consultations, field inventories, and other investigations should be performed during initial routing studies or other comparable planning activities. To comply with state and federal laws and regulations governing cultural resources, the following specific activities will be completed prior to certification of the subsequent or individual improvement project EIR/EIS or other CEQA/NEPA documents.

- Records Searches

  For each individual improvement project, a records search will be performed at the Southern San Joaquin Valley Information Center of the California Historical Resources Information System, housed at California State University, Bakersfield. Resources to be examined at the Information Center include site location and survey coverage base maps, listings on the National Register of Historic Places and California Register of Historic Resources, State Historic Property Data Files, National Register of Determined Eligible Properties, California

Historical Landmarks, California Points of Historic Interest, and California Office of Historic Preservation Archaeological Determinations of Eligibility. As appropriate for each individual improvement project, background research will also be conducted at city and county historical societies, libraries, museums, and other institutions that may have relevant information on the nature and location of cultural resources within the individual improvement project area.

- Native American Consultation

  For each individual improvement project, contact the Native American Heritage Commission (NAHC) in Sacramento and request a search of their Sacred Lands File for information on the individual improvement project area. The NAHC will also supply a list of Native American representatives whose traditional lands encompassed the individual improvement project area. Those included on the NAHC consultant list will be contacted by letter and follow-up telephone calls to request information about the study area, and to provide them the opportunity to articulate their views on possible impacts of the individual improvement project and appropriate mitigation measures.

- Paleontological Research

  Conduct a records and literature search at the appropriate institutions, review geological maps for potential fossiliferous formations, and prepare an initial assessment of paleontological resource sensitivity in the individual improvement project area. Compile a list of relevant sites and known fossiliferous formations, and assess each individual improvement project's potential to impact paleontologically significant resources.

- Archaeological Survey

  For each individual improvement project, systematically traverse unsurveyed areas on foot using transects spaced 15-20 meters apart. Previously surveyed areas, as indicated by the Information Center survey coverage base maps, will be resurveyed if prior surveys were completed more than ten years previously or if survey coverage was insufficient due to conditions at the time. Historical or prehistoric archaeological sites discovered within or immediately adjacent to the survey area will be documented according to current professional standards on the appropriate Department of Parks and Recreation forms (DPR-523). Previously recorded sites will be revisited, and their documentation will be updated to the current formats and standards. All sites, features, and isolates will be photographed using 35-millimeter and/or digital pictures, and their locations plotted on the appropriate USGS topographic 7.5' quadrangle. Planimetric site sketch maps will be prepared for each archaeological site, depicting site boundaries, concentrations, features, diagnostic artifacts, and areas of disturbance. Site locations will also be plotted using a Global Positioning System.

- Architectural Survey

  Buildings, structures, objects, linear cultural features, and other non-archaeological properties will be inventoried to current professional standards and recorded on the appropriate Department of Parks and Recreation forms (DPR-523). Documentation on previously recorded sites will be updated to the current formats and standards. All resources will be photographed using 35-millimeter and/or digital pictures, and their locations plotted on the appropriate USGS topographic 7.5' quadrangle.

- Significance Evaluation and Impact Assessment

  Any cultural resources that will be directly impacted by a proposed individual improvement project will be evaluated for significance according to the criteria of the National Register and/or California Register, as appropriate. If the boundaries of the resource or its spatial relationship to the impact area are unclear, then

boundary definition using more detailed surface and subsurface investigations may be required. Significance evaluations may require additional archival and background research, additional field documentation, or other studies. Evaluation of archaeological properties may require test excavations, backhoe trenching, or other forms of subsurface investigation; laboratory processing and analysis of recovered remains; and a variety of special technical studies. These evaluations will define the qualities of the resource that make it significant and assess site integrity as a means for judging the nature and extent of individual improvement project impacts. Significance evaluations and impact assessments will be performed by appropriately qualified specialists meeting the Secretary of Interior's Professional Qualifications Standards (FR 190: 44740–44741). Artifacts and other remains collected from the field, along with field records and other documentation, will be curated at the Museum of Anthropology, California State University, Bakersfield, or another institution capable of providing secure, long-term storage, care, and access to the public.

- Technical Report/EIR Sections

Prepare a technical report documenting the results of the records search, background research, Native American consultation, paleontological research, field surveys, resource evaluations, and other studies. Because these reports may detail locations within the individual improvement project areas known to be culturally and paleontologically sensitive, they will be confidential technical appendices to each EIR/EIS. Summary sections included in the body of the EIR/EIS will not disclose sensitive site location information. The confidential technical report and EIR/EIS sections will discuss the importance of historical, archaeological, and paleontological resources identified during the study, identify the potential for significant impacts, and discuss adequate and feasible mitigation measures. The reports will adhere to professional standards outlined by the State Office of Historic Preservation in *Archaeological Resource Management Reports (ARMR): Recommended Contents and Format* (Jackson 1990).

- Agency Consultation

For federally entailed projects, the lead federal agency must consult with the State Historic Preservation Officer (SHPO) regarding the identification, evaluation, and subsequent mitigative treatment of cultural resources. The SHPO does not play a role in the CEQA process unless state lands, state-owned properties, or unusually important resources are involved. For federal projects, the SHPO is asked to review and concur with the federal agency's findings regarding the significance of resources and the appropriate treatment. Initial consultation with the SHPO should occur early in the planning process, with follow-on consultation and review at each stage.

If the studies described above determine that significant cultural resources will be affected by the proposed individual improvement project, then additional impact mitigation may be required if the individual improvement project cannot be redesigned to avoid the resource. Impact mitigation may take a variety of forms depending on the nature of the site and the nature and extent impacts. As noted above, site avoidance is the preferred mitigation measure. If resources cannot be avoided entirely, portions of the resources outside the impact area may be preserved in an exclusion zone—a fenced area where construction equipment and personnel are not permitted. Together, avoidance and use of exclusion zones ensures the maximum *in-situ* preservation of significant cultural resources.

Where avoidance is infeasible and significant cultural resources are jeopardized by a individual improvement project, one or a combination of the following measures will be implemented:

- Data recovery excavation;
- Additional analysis of existing collections;
- Additional archival/historical research;
- Photographic documentation; and

- Archaeological monitoring during construction, followed by data recovery excavation or other appropriate measures if significant archaeological remains are exposed.

Final decisions regarding impact mitigation will be made in consultation among the individual improvement project proponent, regulatory agencies, technical specialists, and other interested parties. If data recovery excavation is the recommended mitigation, then the EIR/EIS must include a data recovery plan. Data recovery will be supervised by appropriately qualified specialists meeting the Secretary of Interior's Professional Qualifications Standards (FR 190: 44740–44741). Artifacts and other remains collected from the field, along with field records and other documentation, will be curated at the Museum of Anthropology, California State University, Bakersfield, or another institution capable of providing secure, long-term storage, care, and access to the public.

It should be noted that photographic documentation or other records of historical buildings or structures prepared to the standards of the Historic American Building Survey or Historic American Engineering Record (commonly referred to as HABS/HAER standards) may constitute appropriate treatment of effects according to federal regulations, but may not mitigate individual improvement project impacts to a level of less than significant according to CEQA standards and its defining case law.

Significance After Mitigation

The recommended mitigation measures would require individual improvement project proponents to follow a comprehensive procedure to assess the magnitude of impacts, and to avoid or mitigate the impacts, if necessary. However, due to the size and potentially large number of resources that could be disturbed as a result of the projects in the 2011 RTP, cumulative impacts to cultural resources would remain a potentially significant impact at a regional level.

Impact 3.6.2 – Construction Impacts

Construction activities shall avoid known paleontological resources, if feasible, especially if the resources in a particular lithic unit formation have been determined through detailed investigation to be unique.

When a construction activity could significantly disturb soils or geologic formations in areas identified as having a moderate to high potential to support paleontological resources, a qualified researcher must be stationed on-site to observe during excavation operations and recover scientifically valuable specimens. As part of this mitigation, the following actions should be taken:

- A certified paleontologist shall be retained (or required to be retained) by the project implementing agency prior to construction to establish procedures for surveillance and the preconstruction salvage of exposed resources if fossil bearing sediments have the potential to be impacted.
- The monitor shall provide preconstruction coordination with contractors, oversee original cutting in previously undisturbed areas of sensitive formations, halt or redirect construction activities as appropriate to allow recovery of newly discovered fossil remains, and oversee fossil salvage operations and reporting.
- This measure shall be placed as a condition on all plans where excavation and earthmoving activity is proposed in a geologic unit having a moderate or high potential for containing fossils.
- Excavations of paleontological resources should be overseen by the qualified paleontologist and the paleontological resources given to a local agency, or other applicable institution, where they could be displayed or used for research.

Where practicable, routes and project designs that would permanently alter unique geologic features shall be avoided.

Significance After Mitigation

The recommended mitigation measures would require individual improvement project proponents to follow a comprehensive procedure to assess the magnitude of impacts, and to avoid or mitigate the impacts, if necessary. However, due to the size and potentially large number of resources that could be disturbed as a result of the projects in the RTP, cumulative impacts to cultural resources would remain a potentially significant impact at a regional level.

Cumulative Impacts 3.6.3

Growth and development in Kern County will increase substantially by 2035. The 2011 RTP, by increasing mobility and by inclusion of transportation measures, influences the pattern of this development. The 2011 RTP's influence on growth contributes to regional impacts to existing historic resources and previously undisturbed and undiscovered cultural resources, as described in Impacts 3.6.1 and 3.6.2 above.

This impact would be cumulatively considerable.

The amount of new developed acreage (consuming previously vacant, open space/recreation and agricultural land) from transportation and land use policies in the 2011 RTP would be considerable when compared to the No Build or No Project Alternatives. This degree of development is reasonably foreseeable; however, to assign this future development to precise locations would be speculative, such that it cannot be estimated where cultural resources would be affected. Despite the inability to predict the acreage of previously undisturbed land that may be affected, it is reasonable to expect that this future development would contribute to the same types of impacts detailed in Impacts 3.6.1 and 3.6.2 above.

These effects are considered a significant cumulative impact.

Mitigation Measures

The cumulative impacts to cultural resources, due to the forecast growth and development associated with the 2011 RTP, would be mitigated using the same measures detailed for Impacts 3.6.1 and 3.6.2, in addition to the following measure.

- Future impacts to cultural resources shall be minimized through cooperation and information sharing between the implementation agency and affected resource agencies.

Significance After Mitigation

The impacts to cultural resources due to regional scale growth would be reduced through application of the mitigation measures, however implementation of the 2011 RTP's transportation improvement projects to accommodate growth and development in Kern County (as reflected in adopted local agency general plans) would contribute to cultural resource impacts. Impacts to cultural resources from the 2011 RTP would be cumulatively considerable.

Geology/Soils

Impact 3.7.1

Seismic events can damage transportation infrastructure through ground shaking, liquefaction, surface rupture and landslides.

Property and public safety from seismic activity would be considered a significant impact in some cases.

Mitigation Measures

- Individual improvement project structures will be built by responsible agencies to the seismic standards contained in the most recent edition of the Uniform Building Code (UBC).
- Implementing agencies will ensure that improvement projects located within or across active fault zones comply with design requirements, published by the CGS, as well as local, regional, state, and federal design criteria for construction of projects in seismic areas.

The implementing agencies will guarantee that geotechnical analysis is conducted within construction areas to establish soil types and local faulting prior to individual improvement project design preparation.

Significance After Mitigation

Implementation and monitoring of the above mitigation measures will provide the framework and direction for subsequent individual improvement project-specific mitigation designed to avoid or reduce the identified significant Project impacts to a less than significant level.

Impact 3.7.2

Some improvement projects require significant earthwork, increasing potential slope failure and long-term erosion. Earthwork can also alter unique geologic features. Project impacts would be considered significant in some cases.

Several improvement projects would involve substantial construction of new highway segments within previously undisturbed areas. Some of these projects could require significant earthwork or cuts into hillsides, which can become unstable over time. Road cuts can expose soils to erosion over the life of an individual improvement project, creating potential landslide and falling rock hazards. Engineered roadways can be undercut over time by storm water drainage and wind erosion. Some areas would be more susceptible to erosion than others because of the naturally occurring soils with high erosion potential.

Other projects on steep grades or winding mountain passes would pose the greatest potential impacts. Notwithstanding natural soil types, engineered soils can also erode because of poor construction methods and design features or lack of maintenance. Appropriate construction methods, earthwork design, and road cut design can reduce this potential impact to less than significant levels.

Mitigation Measures

- The implementing agencies will ensure that individual improvement project designs provide adequate slope drainage and appropriate landscaping to minimize the occurrence of slope instability and erosion.

- Design features will include measures to reduce erosion from storm water.
- Road cuts will be designed to maximize the potential for revegetation.
- Implementing agencies will ensure that projects avoid landslide areas and potentially unstable slopes wherever feasible.
- Where practicable, routes and individual improvement project designs that would permanently alter unique geologic features will be avoided.

Significance After Mitigation

Given the topography, ecology and meteorology of the Kern region, long-term erosion and the potential for slope-failure will remain significant.

Impact 3.7.3

Local geology can affect transportation infrastructure. Potentially significant impacts to property and public safety could occur due to subsidence and the presence of expansive soils. Mitigation measures would reduce these impacts to less than significant levels.

Subsidence has historically occurred within the Kern region because of groundwater overdraft and petroleum extraction. Unconsolidated soils containing petroleum or groundwater often compress when the liquids are removed, causing the surface elevation to decrease. Improperly abandoned oil wells or underground hard rock mining can also cause localized subsidence.

Subsidence can also occur in areas with unconsolidated soils that have not historically shown elevation changes. Transportation infrastructure designs must include appropriate reinforcement to minimize potential impacts from subsidence in areas where such activity has not been witnessed. In addition, soils with high percentages of clay can expand when wet, causing structural damage to surface improvements. These clay soils can occur in localized areas throughout the Kern region, making it necessary to survey individual improvement project areas extensively prior to construction. Each new improvement project location would have the potential to contain expansive soils, although they are more likely to be encountered in lower drainage basin areas. Expansive soils are generally removed during foundation work to avoid structural damage. Many of the improvement projects would occur within existing transportation corridors, where expansive soils may be expected to have already been removed.

Mitigation Measures

- Implementing agencies will ensure that geotechnical investigations are conducted by a qualified geologist to identify the potential for subsidence and expansive soils.
- Recommended corrective measures, such as structural reinforcement and replacing soil with engineered fill, will be implemented in individual improvement project designs.
- Implementing agencies will ensure that, prior to preparing individual improvement project designs, new and abandoned wells are identified within construction areas to ensure the stability of nearby soils.

Significance After Mitigation

Implementation and monitoring of the above mitigation measures will provide the framework and direction for subsequent project-specific mitigation designed to avoid or reduce the identified significant Project impacts to a less than significant level.

Impact: 3.7.4

Because of Kern County's moderately high level of seismic activity (reference Figures 3-7 and 3-8), construction projects may be susceptible to fault rupture and severe ground shaking. Individual improvement project susceptibility and potential damage to structures resulting from seismic action is considered a significant impact.

Mitigation Measure

- Implementing agencies shall ensure that projects are designed in accordance with county and city code requirements for seismic ground shaking. The design of projects shall consider seismicity of the site, soil response at the site, and dynamic characteristics of the structure, in compliance with the appropriate California Building Code and State of California design standards for construction in or near fault zones, as well as all standard design, grading, and construction practices in order to avoid or reduce geologic hazards.
- Implementing agencies shall ensure that projects located within or across Alquist- Priolo Zones comply with design requirements provided in Special Publication 117, published by the California Geological Survey, as well as relevant local, regional, state, and federal design criteria for construction in seismic areas.
- The project implementing agencies shall ensure that geotechnical analyses from qualified geotechnical experts are conducted within construction areas to ascertain soil types and local faulting prior to preparation of project designs. These investigations would identify areas of potential failure and recommend remedial geotechnical measures to eliminate any problems.

Significance After Mitigation

Implementation and monitoring of the above mitigation measure will provide the framework and direction for subsequent individual improvement project-specific mitigation designed to avoid or reduce the identified significant Project impacts to a less than significant level.

Impact: 3.7.5

As discussed in the Environmental Setting Section, soil types and bedrock formations within Kern County range widely in terms of their potential for geologic hazards. Although the scope of study performed for this EIR evaluation did not include a determination for project-specific liquefaction or seismic settlement potential, it is possible that liquefiable soils or soils susceptible to seismic compaction during ground shaking exist within areas of planned transportation improvement projects. This is a potentially significant impact, which will require analysis as part of subsequent project-specific environmental review.

In addition, individual improvement project construction will require removal of vegetative cover and exposure of site soils to wind and surface water runoff. High erosion rates are typical of disturbed sites. Because of the high erosion potential of some categories of soils, risk of erosion is considered a significant impact.

Implementation of the proposed Project could potentially have short-term and long-term effects on water quality downstream from specific individual improvement project sites. The short-term impacts relate to the grading and construction phases of individual improvement projects that may cause erosion, while the long-term impacts may result from increased runoff flows from larger areas of asphalt.

Mitigation Measures

- Improvement projects with significant cuts or fill will include a geotechnical investigation to identify adverse soil conditions and develop recommendations for design and construction that would limit the effects of adverse soil and bedrock conditions.

- Cut and fill plans will be prepared for all improvement projects where cut and fill will be reburied, so that all fill materials are properly designed, placed, and compacted.

- Preparation of a detailed erosion control plan will be prepared to limit the effects of soil erosion and water degradation during improvement project construction, in accordance with permit conditions and requirements of the State Water Resources Control Board's Best Management Practices (BMPs), or equally effective measures will be employed.

Significance After Mitigation

Given the topography, ecology and meteorology of the Kern region, long-term erosion and impacts on water quality will remain significant.

Impact: 3.7.6

Some street and highway projects may be proposed along alignments that will affect State-owned and State mineral-reserved lands.

Mitigation Measure

- Where possible, improvement projects will be designed by responsible agencies to limit potential impacts on State-owned or State mineral-reserved lands.

Significance After Mitigation

Given the extent of State-owned or State mineral-reserved lands in the Kern region, impacts associated with the Project will remain significant.

Cumulative Impact 3.7.7

Growth and development in Kern County would increase substantially by 2035. The 2011 RTP, by increasing mobility and including transportation measures, influences the pattern of this urbanization. Implementation of the 2011 RTP would have the potential to result in a cumulatively considerable adverse effect on human beings and property when considered at the regional scale.

Potentially hazardous geological and seismic factors are found throughout the San Joaquin Valley. Given the regional scale and growth-inducing nature of the projects and programs included in the 2011 RTP, the cumulative impacts of the 2011 RTP on geological units and soils as well as the potential exposure to substantial adverse effects to people and property would be significant.

Mitigation Measures

Mitigation measures 3.7.1 through 3.7.6 would be applied to this impact in addition to the following measure:

- Future impacts to geologic resources shall be minimized through cooperation and information sharing between the implementation agency and affected resource agencies.

Significance After Mitigation

The impacts to geologic resources due to regional scale growth would be reduced through application of the mitigation measures, however implementation of the 2011 RTP's transportation improvement projects to accommodate growth and development in Kern County (as reflected in adopted local agency general plans) would contribute to geologic resource impacts. Impacts to geologic resources from the 2011 RTP would be cumulatively considerable.

Hazards & Hazardous Materials

Impact 3.8.1 - Transport, use, or disposal of hazardous materials Impacts

The proposed RTP includes projects that may involve the transportation, use, and/or disposal of hazardous materials, particularly the proposed freight rail improvements and other goods movement capacity enhancements, which may result in transport of hazardous goods as well as the use of equipment that contains or uses routine hazardous materials (e.g., diesel fueled equipment), or the transportation of excavated soil and/or groundwater containing contaminants from areas that are identified as being contaminated.

It is anticipated that these activities would result in a less than significant hazard to the public and/or the environment, because these activities are subject to numerous laws, regulations, and health and safety standards set forth by federal, state, and local authorities that regulate the proper handling of such materials and their containers. These include the EPA, the Occupational Safety and Health Administration (OSHA), USDOT, and the Food and Drug Administration (FDA) for the federal government. State agencies, including the Health and Welfare Agency (HWA), under which is the DTSC, have parallel, and in some cases more stringent, rules governing the use of hazardous materials.

USDOT requires the use of hazardous waste manifests which are used to ensure that hazardous wastes are strictly monitored and tracked from the point of generation through ultimate disposal. To operate in California, all hazardous waste transporters must be registered with the DTSC. Unless specifically exempted, hazardous waste transporters must comply with the California Highway Patrol Regulations; the California State Fire Marshal Regulations; and the United States Department of Transportation Regulations.

In addition, the construction and maintenance of transportation facilities included in the 2011 RTP would involve the use of hazardous materials such as solvents, paints and other architectural coatings. The use and storage of these materials will be regulated by local fire departments, CUPAs, and the California Division of Occupational Safety and Health. Materials left over from construction projects can likely be re-used on other projects. For materials that cannot be or are not reused, disposal would be regulated by the DTSC under state and federal hazardous waste regulations.

Due to the strict and numerous regulations governing the use of hazardous materials, impacts are expected to be less than significant.

The following mitigation measure is included to ensure compliance with applicable regulations.

Mitigation Measures

- The implementation agency shall comply with all applicable laws, regulations, and health and safety standards set forth by federal, state, and local authorities that regulate the proper handling of such materials and their containers to the routine transport, use, and disposal of hazardous materials does not create a significant hazard to the public or the environment.

Significance After Mitigation

The mitigation measure would assure appropriate steps taken to minimize any hazard to the public or the environment. The impact after mitigation would be less than significant.

Impact 3.8.2 - Release of Hazardous Materials

The implementation of the 2011 RTP could create a hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment during transportation. Implementation of the 2011 RTP would facilitate the movement of goods, including hazardous materials, through the region. Transportation of goods, in general, and hazardous materials in particular, can thus be expected to increase substantially with implementation of the 2011 RTP.

Given the large volume of materials currently and projected to be transported through the region, some portion of which is and will continue to be, hazardous, the risk of upset as a result of accident or human interference is significant.

Mitigation Measures

- Implementing agencies shall encourage the USDOT, the Office of Emergency Services, and Caltrans to continue to conduct driver safety training programs and encourage the private sector to continue conducting driver safety training.
- Implementing agencies shall encourage the USDOT and the CHP to continue to enforce speed limits and existing regulations governing goods movement and hazardous materials transportation.

Significance After Mitigation

The improvements to the regional transportation system by 2035 would facilitate a substantial increase in the transportation of all goods, including hazardous materials. However, even with the above mitigation, this impact would remain significant.

Impact 3.8.3

The implementation of the 2011 RTP could create a hazard to the public or the environment through the disturbance of contaminated property during the construction of new transportation or expansion of existing transportation facilities.

Construction of the projects in the 2011 RTP could involve construction through or next to sites that are contaminated due to past use or disposal of hazardous materials. In the two decades since federal and state laws were adopted providing for remediation of these sites, it is likely that the majority of contaminated sites have been identified or are easily identifiable from existing information. Given the intensity of past use of land in the region there are substantial numbers of contaminated sites, and it is likely that most RTP projects will have to address this issue.

Because of the large number of contaminated sites and the risk associated with encountering and cleaning up these sites, this impact is considered to be significant.

Mitigation Measures

- Prior to approval of any RTP project, the project implementation agency shall consult all known databases of contaminated sites and undertake a standard Phase 1 Environmental Site Assessment in the process of planning, environmental clearance, and construction for projects included in the 2011 RTP. If contamination is found the implementing agency shall coordinate clean up and/or maintenance activities.

- Where contaminated sites are identified, the project implementation agency shall develop appropriate mitigation measures to assure that worker and public exposure is minimized to an acceptable level and to prevent any further environmental contamination as a result of construction.

- Local agencies should contact the Chevron Environmental Management Company (CEMC) to determine whether an improvement project may be in the vicinity of the Tidewater Oil Company or Standard Oil Company historical pipeline alignments. A map of the alignments is provided in Appendix B of this SEIR.

Significance After Mitigation

The mitigation measure would assure that contaminated properties are identified and appropriate steps taken to minimize human exposure and prevent any further environmental contamination. The impact after mitigation would be less than significant.

Cumulative Impact 3.8.4

Implementation of the investments and policies in the 2011 RTP could create a potential hazard to the public or the environment by the disturbance of contaminated sites as a result of population and housing growth in the region.

The 2011 RTP's influence on mobility and its transportation measures would influence population distribution, potentially contributing to a cumulatively considerable impact related to disturbance of contaminated sites by new urban development. With additional pressure for infill development, reuse of "brownfields" properties may become more common as the region grows.

This impact is considered to be significant.

Mitigation Measures

Mitigation Measures 3.8.1 through 3.8.3 as implemented by responsible agencies and private developers would address this impact.

Significance After Mitigation

With appropriate review and clean up or maintenance, this impact would not be cumulatively considerable and therefore would be less than significant.

Hydrology/Water Quality

Impact: 3.9.1

Local surface water quality would be affected by increased urban runoff and construction runoff. Increasing impervious surface area would increase urban runoff, which transports greater quantities of contaminants to receiving waters. Construction activities can increase pollutant loads in storm water. In addition, road cut erosion can increase long-term siltation in local receiving waters.

Mitigation Measure

- Improvement projects along existing facilities will include upgrades to storm water drainage facilities to accommodate increased runoff volumes. These upgrades may include the construction of detention basins or structures that will delay peak flows and reduce velocity.

Impact: 3.9.2

The installation of transportation infrastructure and expansion of individual improvement project facilities could encounter groundwater. Individual projects may require dewatering during construction and for the life of the improvement project.

Mitigation Measures

- Transportation network improvements will comply with local, state and federal floodplain regulations. Proposed transportation improvements will be engineered by responsible agencies to accommodate storm drainage flow.

- Responsible agencies should ensure that operational best management practices for street cleaning, litter control, and catch basin cleaning are provided to prevent water quality degradation. Responsible agencies implementing projects requiring continual water removal facilities will provide monitoring systems including long-term administrative procedures to ensure proper operations for the life of the improvement project.

Impact: 3.9.3

The Project could increase flooding hazards. Installation of impervious surfaces increases storm water runoff volumes and peak flow rates. This can create flooding hazards in local receiving waters and drainage systems. In addition, placing new structures within an existing floodplain can impede floodwaters, altering the flood elevations upstream and downstream.

Mitigation Measures

- Prior to construction, and when a potential drainage issue is known, a drainage study will be conducted by responsible agencies for new capacity-increasing projects. Drainage systems will be designed to maximize the use of detention basins, vegetated areas, and velocity dissipaters to reduce peak flows where possible. Transportation improvements will comply with federal, state and local regulations regarding storm water management. State-owned freeways must comply with Storm Water Discharge NPDES permit for Caltrans facilities.

- Responsible agencies will ensure that new facilities include water quality control features such as drainage channels, detention basins, and vegetated buffers to prevent pollution of adjacent water resources by runoff.

- Letters of Map Revision (LOMR) will be prepared and submitted to FEMA (when applicable) by responsible agencies where construction would occur within 100-year floodplains. The LOMR will include revised local base flood elevations for projects constructed within flood-prone areas.

Impact: 3.9.4

Local surface water quality would be affected by increased urban runoff and construction runoff. Increasing impervious surface area would increase urban runoff, which transports greater quantities of contaminants to receiving waters. Construction activities can increase pollutant loads in storm water. In addition, road cut erosion can increase long-term siltation in local receiving waters.

Mitigation Measure

- Improvement projects along existing facilities will include upgrades to storm water drainage facilities to accommodate increased runoff volumes. These upgrades may include the construction of detention basins or structures that will delay peak flows and reduce velocity.

Significance After Mitigation

Implementation and monitoring of the above mitigation measures will provide the framework and direction for subsequent project-specific mitigation designed to avoid or reduce the identified significant Project impacts to a less than significant level.

Cumulative Impact 3.9.5

Growth and development will increase substantially by 2035. The 2011 RTP, by increasing mobility and by including transportation measures, influences the pattern of this development. The 2011 RTP's influence on growth would contribute to the conversion of undeveloped land, resulting in impacts to water quality, stormwater infiltration and groundwater recharge, flood hazard impacts, and wastewater treatment services, and water demand.

The growth projection associated with the 2011 RTP would substantially increase the amount of developed land in the County. With the 2011 RTP, the amount of new developed acreage (consuming previously vacant land) would be considerable.

Mitigation Measures

Mitigation Measures 3.9.1 through 3.9.4 shall be applied to all development projects, as feasible, in addition to the following measures:

- Local governments should encourage Low Impact Development and natural spaces that reduce, treat, infiltrate and manage stormwater runoff flows in all new developments.
- Local governments should implement green infrastructure and water-related green building practices through incentives and ordinances. Green building resources include the U.S. Green Building Council's Leadership in Energy and Environmental Design, Green Point Rated Homes, and the California Green Builder Program.
- Local governments should integrate water resources planning with existing greening and revitalization initiatives, such as street greening, tree planting, development and restoration of public parks, and parking lot conversions, to maximize benefits and share costs.
- Developers, local governments, and water agencies should maximize permeable surface area in existing urbanized areas to protect water quality, reduce flooding, allow for groundwater recharge, and preserve wildlife

habitat. New impervious surfaces should be minimized to the greatest extent possible, including the use of in-lieu fees and off-site mitigation.

- Future impacts to water quality shall be avoided through cooperative planning, information sharing, and comprehensive pollution control measure development.
- Local jurisdictions and water agencies are encouraged to continue regional-scale planning for improved stormwater management and groundwater recharge. Future adverse impacts shall be avoided through cooperative planning, information sharing, and comprehensive implementation efforts.
- Local governments should prevent development in flood hazard areas that do not have appropriate protections, especially in alluvial fan areas of the region.
- Local jurisdictions should encourage new development and industry to locate in those service areas with existing wastewater infrastructure and treatment capacity, making greater use of those facilities prior to incurring new infrastructure costs.
- Wastewater treatment agencies are encouraged to have expansion plans, approvals and financing in place once their facilities are operating at 80 percent of capacity.
- Local jurisdictions should promote reduced wastewater system demand by: designing wastewater systems to minimize inflow and increase upstream treatment and infiltration to the extent feasible, reducing overall source water generation by domestic and industrial users, deferring development approvals for industries that generate high volumes of wastewater until wastewater agencies have expanded capacity.
- Project developers and agencies should consider potential climate change hydrology and attendant impacts on available water supplies and reliability in the process of creating or modifying systems to manage water resources for both year round use and ecosystem health.
- Local water agencies should continue to evaluate future water demands and establish the necessary supply and infrastructure to meet that demand.
- Developers, local governments, and water agencies should include conjunctive use as a water management strategy when feasible.
- Developers and local governments should reduce exterior uses of water in public areas, and should promote reductions in private homes and businesses, by shifting to drought-tolerant native landscape plantings (xeriscaping), using weather-based irrigation systems, educating other public agencies about water use, and installing related water pricing incentives.
- Future impacts to water supply shall be minimized through cooperation, information sharing, and program development.

Significance After Mitigation

New development expected by 2035 would create adverse impacts on water quality, stormwater infiltration and groundwater recharge, flood hazard impacts, and wastewater treatment service and water demand impacts.

The 2011 RTP's influence on growth distribution is a cumulatively considerable contribution to this significant impact.

Land Use/Planning

Impact 3.10.1

Strategies aimed at addressing the transportation needs of future growth patterns were considered during development of the RTP. The document promotes alternatives to the automobile through enhanced funding (beyond that identified in the 2011 RTP) for transit and other alternative modes of transportation such as bicycle facilities, trails, airport improvements, and others. Implementation of strategies proposed in the RTP could result in positive changes to land uses. This would be considered a beneficial impact.

Implementation of transit improvements included in the Plan could influence land use patterns throughout the region. Land use and transportation policies are emphasized in the RTP in order to address automobile traffic and air quality concerns. Growth patterns that promote alternatives to the automobile by creating mixed-use developments, which would include residences, shops, parks, and civic institutions, linked to pedestrian-and-bicycle friendly public transportation centers, are also discussed in the 2011 RTP. Design features, such as improved street connectivity, public amenities, and a concentration of residences and jobs in proximity to transit routes could be incorporated into mixed-use developments; therefore, addressing automobile traffic and air quality concerns. Implementation of enhanced alternative modes as provided by the RTP could result in more balanced land use conditions throughout the region, as the mixed-use developments would result in a concentration of jobs and residences in close proximity to one another.

While the RTP is likely to result in a positive outcome related to supportive land use conditions for alternative forms of transportation such as transit, other projects in the RTP could have significant impacts on land use patterns, potentially causing land use growth and development to occur in areas not previously envisioned for growth and development. This impact could be especially significant on agricultural land uses within the County.

Mitigation Measures

The impact on significant agricultural resources will be evaluated as part of the appropriate improvement project-specific environmental review. Mitigation measures will be identified to minimize impacts. Implementation agencies will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with all mitigation measures.

- Individual projects will be consistent with local land use plans and policies that designate areas for urban land use and preserve agricultural lands that support the economic viability of agricultural activities.

- Prior to final approval of each individual improvement project, the implementing agency will conduct the appropriate project-specific environmental review, including consideration of potential land use impacts.

Significance After Mitigation

While implementation and monitoring of the above mitigation measures will provide the framework and direction for subsequent project-specific mitigation designed to avoid or reduce the identified significant Project impacts, it is probable that such impacts will remain significant and unavoidable.

Impact 3.10.2

There are many sensitive receptors located in the urban and rural areas of the County. They include residences, educational facilities, medical facilities, and places of worship. Sensitive receptors located in the vicinities of

proposed improvement projects could be impacted by construction and implementation of the proposed highway, arterial and transit projects. This would be considered a potentially significant impact.

Construction of new parkways and connectors, widening of existing highways and the construction of new interchanges are some of the highway and arterial projects. However, many other types of transportation projects would not involve construction activities. Many proposed public transit projects involve service alterations along existing streets, highways, and rail lines.

Generally, proposed projects are of the following two types:

- *New Systems* (new highway and transit facilities); or
- *Modifications to Existing Systems* (widening roads, addition of carpool lanes, grade crossings, intelligent transportation systems, maintenance, and service alterations).

Sensitive receptors could be impacted because of the proposed individual improvement projects. These possible impacts would depend on several factors such as the type of individual improvement project proposed for the area, projected land use designation of the area, and duration of proposed construction activities. For the most part, improvement projects involving new systems would pose the greatest potential impacts to sensitive receptors. Specifically, sensitive receptors located in the vicinities of such improvement projects could be significantly impacted by the construction and operation of the proposed projects. Additionally, modification projects would result in short-term construction and long-term impacts to sensitive receptors.

Mitigation Measures

Impacts to sensitive receptors will be evaluated as part of the appropriate project-specific environmental review, and mitigation measures will be identified to minimize impacts. Implementation agencies will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with all mitigation measures.

- Prior to commencing construction activities on individual projects, project implementation agencies will comply with applicable federal, state and applicable city and county land use plans, policies, and regulations.

- Prior to commencing construction activities with individual projects, implementation agencies will obtain necessary local permits and meet conditions for approval from applicable cities and counties.

- Prior to final approval of each individual improvement project, the implementing agency will conduct the appropriate project-specific environmental review, including consideration of potential land use impacts.

- Potential significant impacts to land uses will be mitigated.

Significance After Mitigation

This impact would remain significant and unavoidable because of the large number of individual projects that may potentially affect sensitive receptors.

Impact 3.10.3

Construction and implementation of projects would result in the loss of open space and community recreation areas. This would be considered a potentially significant impact. Pockets of open space vary in size and location throughout the County and within the cities. Open space land uses include agricultural areas, public parks, recreational facilities, and areas planned for such uses.

The Project includes highway, arterial and transit projects proposed to be located in or adjacent to areas designated for open space. The potential for significant impacts to natural habitats and community recreation exists, since these projects may be constructed in areas that have habitat and recreational value. Construction of RTP projects could result in the disturbance or loss of open space and recreational resources. Specifically, new projects involving construction would be most likely to result in impacts to open space areas.

Mitigation Measures

The impact on open space and community recreation areas will be evaluated as part of the appropriate individual improvement project-specific environmental review and mitigation measures will be identified to minimize impacts. Implementation agencies will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with all mitigation measures.

- Implementation agencies will ensure that projects are consistent with federal, state, and local plans that preserve open space and recreation.
- Implementation agencies will identify open space and recreation areas that could be preserved and will include mitigation measures (such as dedication or payment of in-lieu fees) for the loss of open space.
- Prior to final approval of each individual improvement project, the implementing agency will conduct the appropriate project-specific environmental review, including consideration of loss of open space and recreation.
- Potential significant impacts to open space will be mitigated.
- For projects that require approval or funding by the U.S. Department of Transportation, implementation agencies will comply with Section 4(f) of the U.S. Department of Transportation Act.

Significance After Mitigation

It is anticipated that implementation of the Project could potentially result in the loss or disturbance of open space; therefore, this impact would remain significant and unavoidable.

Impact 3.10.4

Implementation of the projects and programs contained in the 2011 RTP could potentially result in the disturbance or loss of significant agricultural resources throughout the Kern region. This would be considered a potentially significant impact. The County contains areas designated by the state as Prime Farmland, Unique Farmland, and Farmland of Statewide Importance. These areas are interspersed throughout urban areas or are located in undeveloped portions of the region. Development of highway, arterial and transit projects proposed under the RTP could potentially result in the disturbance or loss of some of these designated areas. Specifically, new projects involving construction would be most likely to result in impacts to these areas.

Mitigation Measures

The impact on significant agricultural resources will be evaluated as part of the appropriate individual improvement project-specific environmental review, and mitigation measures will be identified to minimize impacts. Implementation agencies will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with all mitigation measures.

- Individual projects will be consistent with federal, state, and local policies that preserve agricultural lands and support the economic viability of agricultural activities, as well as policies that provide compensation for property owners if preservation is not feasible.

- For projects in agricultural areas, individual improvement project implementation agencies will contact the California Department of Conservation and the County Agricultural Commissioner's office to identify the location of prime farmlands and lands that support crops considered valuable to the local or regional economy.

- Prior to final approval of each individual improvement project, the implementing agency will establish conservation easement programs to mitigate impacts to prime farmland.

- Prior to final approval of each individual improvement project, the implementing agency will avoid impacts to prime farmlands or farmlands that support crops considered valuable to the local or regional economy.

- Prior to final approval of each individual improvement project, the implementing agency will encourage enrollments of agricultural lands in the Williamson Act.

Significance After Mitigation

It is anticipated that implementation of the Project could potentially result in the loss or disturbance of significant agricultural resources; therefore, this impact would be considered significant and unavoidable.

Impact 3.10.5

The Project has the potential to conflict with applicable adopted local land use plans and policies.

Most of the projects submitted for inclusion in the RTP are developed through a local review process that involves local jurisdictions working with Kern COG. For this reason, it is unlikely that any individual improvement project submitted would be inconsistent with a local jurisdiction's plan.

Mitigation Measures

No mitigation measures are necessary.

Significance After Mitigation

Not applicable.

Cumulative Impact 3.10.6

Growth and development in the County will increase substantially by 2035. The 2011 RTP, by increasing mobility and including transportation measures, influences the pattern of this development. The 2011 RTP's influence on growth contributes to regional cumulatively considerable impacts to land use and would change the intensity of land use in some areas.

Mitigation Measures

The mitigation measures listed above for Impacts 3.10.1 through 3.10.5 would be applied as mitigation for this impact. In addition, the following measure would apply.

- Regional planning efforts will be used to build a consensus in the region to support changes in land use to accommodate future population growth while maintaining the quality of life in the region.

Significance after Mitigation

In order to accommodate the projected population totals assumed for 2035, the region will need to change land uses and increase the intensity of some existing land use. The cumulative impact would remain significant.

Noise

Impact 3.11.1

Grading and construction activities associated with the proposed highway, arterial, and transit projects would intermittently and temporarily generate noise levels above ambient background levels. Noise levels in the immediate vicinity of the construction sites would increase substantially sometimes for extended durations. This would be considered a potentially significant impact.

Generally, proposed projects are of the following two types:

- *New Systems* (new highway, arterials, interchanges, bridge projects and transit facilities); or
- *Modifications to Existing Systems* (widening roads, addition of carpool lanes, grade crossings, intelligent transportation systems, maintenance, and service alterations).

Construction activities associated with the Project would result in temporary noise increases at nearby sensitive receptors. Impacts to sensitive receptors resulting from these proposed projects would depend on several factors such as the type of individual improvement project proposed for the given area, land use of the given area, and duration of proposed construction activities. Additionally, construction noise levels would fluctuate depending on construction phase, equipment type, and duration of use; distance between noise source and receptor; and presence or absence of barriers between noise source and receptor. In general, sensitive receptors would be significantly impacted by projects involving new systems (new facilities, truck lanes, rail corridors, interchanges, underground rail lines). Specifically, sensitive receptors located in the vicinity of these projects would be significantly impacted by construction of the proposed improvement projects. Additionally, modification projects would result in short-term construction impacts to sensitive receptors. It is not possible under this Program EIR to identify each and every RTP project that may result in impacts to sensitive receptors.

To determine noise impacts and appropriate mitigation, it is necessary to identify a number of variables that may be different for each project including type of project, project geometrics, topography of the surrounding environs, elevation of the project, location of sensitive receptors, and other variables. It is therefore appropriate to undertake a thorough analysis of potential noise impacts during the project development phase of the project. This must be accomplished through applicable rules, procedures, regulations and ordinances.

Mitigation Measures

As part of project-specific environmental review, a detailed evaluation of noise impacts will be undertaken. Project-specific mitigation measures will be identified, as necessary. All mitigation measures will be included in project-level analysis, as appropriate. The implementing agency or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with mitigation measures.

- Implementing agencies will comply with all local sound control and noise level rules, procedures, regulations, and ordinances.

- Implementing agencies will limit the hours of construction to between 6:00 a.m. and 8:00 p.m. on Monday through Friday and between 7:00 a.m. and 8:00 p.m. on weekends.

- Equipment and trucks used for individual improvement project construction will utilize the best available noise control techniques (including mufflers, use of intake silencers, ducts, engine enclosures and acoustically attenuating shields or shrouds) in order to minimize construction noise impacts.

- Impact equipment (e.g., jackhammers, pavement breakers, and rock drills) used for individual improvement project construction will be hydraulically or electrical powered wherever feasible to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatically powered tools is unavoidable, an exhaust muffler on the compressed air exhaust will be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves will be used where feasible, and this could achieve a reduction of 5 dBA. Quieter procedures will be used such as drilling rather than impact equipment whenever feasible.

- Implementing agencies will ensure that stationary noise sources will be located as far from sensitive receptors as possible. If they must be located near existing receptors, they will be adequately muffled.

- Implementing agencies will designate a complaint coordinator responsible for responding to noise complaints received during the construction phase. The name and phone number of the complaint coordinator will be conspicuously posted at construction areas and on all advanced notifications. This person will be responsible for taking steps required to resolve complaints, including periodic noise monitoring, if necessary.

- Noise generated from any rock-crushing or screening operations performed within 3,000 feet of any occupied residence will be mitigated by the individual improvement project proponent by strategic placement of material stockpiles between the operation and the affected dwelling or by other means approved by the local jurisdiction.

- Implementing agencies will direct contractors to implement appropriate additional noise mitigation measures including, but not limited to, changing the location of stationary construction equipment, shutting off idling equipment, rescheduling construction activity, notifying adjacent residents in advance of construction work, and installing acoustic barriers around stationary construction noise sources to comply with local noise control requirements.

- Implementing agencies will implement use of portable barriers during construction of subsurface barriers, debris basins, and storm water drainage facilities.

- No pile-driving or blasting operations will be performed within 3,000 feet of an occupied residence on Sundays, legal holidays, or between the hours of 8:00 p.m. and 8:00 a.m. on other days. Any variance from this condition will be obtained from the individual improvement project proponent and must be approved by the local jurisdiction.

- Wherever possible, sonic or vibratory pile drivers will be used instead of impact pile drivers, (sonic pile drivers are only effective in some soils). If sonic or vibratory pile drivers are not feasible, acoustical enclosures will be provided as necessary to ensure that pile-driving noise does not exceed speech interference criterion at the closest sensitive receptor.

- In residential areas, pile driving will be limited to daytime working hours.

- Engine and pneumatic exhaust controls on pile drivers will be required as necessary to ensure that exhaust noise from pile driver engines are minimized to the extent feasible.

- Where feasible, pile holes will be pre-drilled to reduce potential noise and vibration impacts.

Significance After Mitigation

It is anticipated that implementation of the Project could potentially result in significant noise impacts; therefore, this impact would be considered significant and unavoidable.

Impact 3.11.2

Noise-sensitive land uses could be exposed to noise in excess of normally acceptable noise levels and/or could experience substantial increases in noise as a result of the operation of expanded or new transportation facilities (i.e., increased traffic resulting from new highways, addition of highway lanes, roadways, ramps, and new transit facilities as well as increased use of existing transit facilities, etc.).

At the regional scale, the noise impacts of new highways, highway widening, new HOV lanes, new transit corridors, and increased frequency along existing transit corridors are generally expected to exceed the significance criteria when they occur near sensitive receptors. Arterials, transportation demand management projects, operations and maintenance projects, grade crossings, ramp and interchange improvements, county-wide bus route expansions, and transit facility improvements are not specifically considered here because noise impacts already occur in the vicinity of these facilities, and determining increases in noise requires greater precision of information.

Mitigation Measures

- As part of the appropriate environmental review of each project, a project specific noise evaluation shall be conducted and appropriate mitigation identified and implemented.
- Project implementation agencies shall employ, where their jurisdictional authority permits, land use planning measures, such as zoning, restrictions on development, site design, and use of buffers to ensure that future development is compatible with adjacent transportation facilities.
- Project implementation agencies shall, to the extent feasible and practicable, maximize the distance between noise-sensitive land uses and new roadway lanes, roadways, rail lines, transit centers, park-and-ride lots, and other new noise generating facilities.
- Project implementation agencies shall construct sound reducing barriers between noise sources and noise-sensitive land uses. Sound barriers can be in the form of earth-berms or soundwalls. Constructing roadways so as appropriate and feasible that they are depressed below-grade of the existing sensitive land uses also creates an effective barrier between the roadway and sensitive receptors.
- Project implementation agencies shall, to the extent feasible and practicable, improve the acoustical insulation of dwelling units where setbacks and sound barriers do not sufficiently reduce noise.
- The project implementation agencies shall implement, to the extent feasible and practicable, speed limits and limits on hours of operation of rail and transit systems, where such limits may reduce noise impacts.
- Passenger stations, central maintenance facilities, decentralized maintenance facilities, and electric substations should be located away from sensitive receptors.

Significance After Mitigation

Although mitigation measures are implemented for the impact, it may not reduce noise levels to below regulatory levels in all circumstances. This impact would remain significant.

Cumulative Impact 3.11.3

Cumulative ambient noise levels could increase in the region to exceed normally acceptable noise levels or have substantial increases in noise as a result of the operation of expanded or new transportation facilities (i.e., increased

traffic resulting from new highways, addition of highway lanes, roadways, ramps, and new use of new transit facilities as well as increased use of existing transit facilities, etc.).

The projects included in the 2011 RTP could have a significant impact on noise in the region. As described under Impact 3.11.1, many of the projects involve construction which would result in significant short term impacts. While the construction noise is temporary and short term at the project level, the cumulative construction noise region wide could be significant. Over the course of the planning horizon there is likely to be constant construction within the region.

Cumulative transportation noise could also increase. This ambient noise increase could be related to aircraft overflights, railroads, as well as freeway, arterial and transit noise.

Mitigation Measures

Mitigation measures intended to reduce the noise impacts on sensitive receptors are part of the 2011 RTP. These include: site design, buffers, soundwalls, etc.

Further reduction in noise impacts would be obtained through the implementation of the measures described in 3.11.1 and 3.11.2.

Significance After Mitigation

Mitigation measures 3.11.1 and 3.11.2 may not reduce noise levels to below regulatory levels in all cases. Therefore, the impact would be significant.

Population/Housing

Impact 3.12.1

The Project could affect overall population, housing and employment growth and dispersion in the region from the predicted regional assumptions. Implementation of the proposed mitigation measures is expected to reduce this to a less than significant impact. The Project is a specific set of transportation improvements together with the long-range transportation plan developed to meet, among other goals, the long-term socio-economic conditions of the region. One of the strategic issues is growth. Between the years, 2010 and 2035, residential population is expected to increase by 56 percent. The recent growth trends in housing, population, and jobs within the region are expected to continue.

Given the location of the region, its mild climate and existing population trends, growth in the region is inevitable. The Project provides for the anticipated transportation needs of projected growth. The Project is based on a projected population in the Kern region in 2035 of 1.32 million people and associated employment. The projected population growth is acceptable under state law.

It is not anticipated that the majority of changes to the transportation network included in the Project will significantly change population, employment and household rates of growth or distribution of growth. Transportation is just one factor that can affect growth. Other factors include the cost of housing, the location of jobs, the economy, and the climate. Factors that account for population growth include natural increase and net migration. The average annual birth rate for California is expected to be 20 births per 1,000 population, compared to 10 births per 1,000 population in West Virginia, the state with the lowest projected birth rate. Additionally, California is expected to attract more than one third of the country's immigrants.

There is some debate as to whether the Project is a response to growth, whether it facilitates growth or in fact induces growth. Infrastructure of any type can be argued to do any one of these. In the case of the Project, the Plans themselves are considered to be, overall, a response to growth; however, individual projects may facilitate or even induce growth. If existing transportation deficiencies are not addressed and future projected travel needs are not accommodated, then some localized areas of the region expected to receive new jobs and/or housing may become undesirable, causing the regional growth total to change or growth to be redistributed.

New or improved transportation facilities provide access to areas of new development, thereby allowing more people and jobs to locate in growth areas. Without these facilities, the lack of access could force development into areas with existing transportation infrastructure, thereby shifting population and employment growth from one area of the region to another. From this standpoint, the inclusion of new or upgraded transportation facilities in the Project could be considered growth inducing in some localities. The lack of new or improved facilities in some areas could also result in increased growth in areas with existing transportation infrastructure, growth that may not have been anticipated in the local general planning process. From this standpoint, the lack of new transportation facilities in the Project could also be considered growth inducing in some other localities.

Major regional capacity-enhancing projects, do have the potential to attract major new growth, and thus could be seen as potentially growth inducing at the regional level. If these projects open up new areas for urban development, particularly through the development of interchanges and new road connections that are in addition to those proposed by the Project, then the dispersion of population, housing and employment growth in the region could differ from that predicted in the regional growth assumptions.

The Project could potentially displace or relocate residences and businesses through acquisition of land and buildings necessary for highway, arterial, and transit improvement. This would be considered a potentially significant impact.

The proposed transportation improvements addressed by the Project could result in significant impacts related to the displacement or relocation of homes and businesses. In some cases, buildings on residential, commercial, and industrial land may have to be removed in order to make way for new or expanded transportation facilities. In other cases, certain transportation improvements could permanently alter the characteristics and qualities of a neighborhood. In any case, the potential for displacement and disruption are major considerations in the final design of individual transportation improvements and are addressed in the design and development of mitigation programs. From the regional perspective, it is assumed that some residential and commercial displacement and disruption will occur.

Many of the improvement projects proposed by the Project that focus on maintaining and operating the existing regional system will occur on existing roadways and will not require the acquisition of land. This is true of most of the proposed carpool lanes, bus lines, transportation demand management projects, intelligent transportation systems, and road maintenance projects and programs. These transportation projects will generally not require the displacement of residences or businesses as the right-of-way has already been acquired.

Other proposed projects, new or expanded highway interchanges, and arterial improvements have the potential to impact residential units and businesses. Depending on the alignments selected, they have the potential to traverse through residential or commercial areas and construction of these projects may require acquisition of new rights-of-way. Depending on the location and scope of these projects, potential impacts could be as major as removal of several homes or businesses or as minor has extending into existing right-of-way.

Mitigation Measures

As part of the appropriate project-specific environmental review, population and job displacement impacts will be evaluated. Mitigation measures will be identified to minimize impacts. Implementation agencies will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with all mitigation measures.

- For projects with the potential to displace homes or businesses, project implementation agencies will evaluate alternate route alignments and transportation facilities that minimize the displacement of homes and businesses. An iterative design and impact analysis would help where impacts to persons or businesses are involved. Potential impacts will be minimized to the extent feasible. If possible, existing rights-of-way should be used.

- Implementation agencies will identify businesses and residences to be displaced. As required by law, relocation and assistance will be provided to displaced residents and businesses, in accordance with the federal Uniform Relocation and Real Property Acquisition Policies Act of 1970 and the State of California Relocation Assistance Act, as well as any applicable City and County policies.

- Implementation agencies will develop a construction schedule that minimizes potential neighborhood deterioration from protracted waiting periods between right-of-way acquisition and construction.

Significance After Mitigation

The impact would remain significant and unavoidable after mitigation due to the potentially large number of displacements that could occur with construction of all the proposed improvement projects.

Impact 3.12.2

The Project has the potential to disrupt or divide a community by separating community facilities, restricting community access and eliminating community amenities. This is a potentially significant impact.

New transportation facilities or expansion of existing facilities could contribute to changes to community character in some areas of the region. The widening of a roadway could be perceived as too great a distance to cross by a pedestrian and thus divide a community. An elevated grade crossing may create a physical barrier in some locations. New transportation corridors may traverse community open space thus eliminating a community amenity. Each of the jurisdictions includes improvements to arterial roadways. Arterial roadways generally serve the local network of streets and provide access to community amenities and public facilities. Changes to these arterial roadways, such as roadway widening that impede pedestrian crossing could create a real or perceived barrier to community amenities such as parks, schools, and other public facilities located across the arterial.

Mitigation Measures

As part of the appropriate project-specific environmental review, community disruption or division will be evaluated. Mitigation measures will be identified to minimize impacts. Implementation agencies will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with all mitigation measures.

- Implementation agencies will design new transportation facilities that protect access to existing community facilities. During the design phase of the individual improvement project, community amenities and facilities should be identified and access to them considered in the design of the individual improvement project.

- Implementation agencies will design roadway improvements, in a manner that minimizes barriers to pedestrians and bicyclists. During the design phase, pedestrian and bicycle routes will be determined that permit easy connections to community facilities nearby in order not to divide the communities.

Significance After Mitigation

The Project proposes improvement programs and projects in the majority of urbanized areas within the region, and as such, the potential to disrupt or divide communities remains a significant unavoidable impact even with mitigation measures.

Cumulative Impact 3.12.3

Growth and development in the County will increase substantially by 2035. The 2011 RTP, by increasing mobility and including transportation measures, influences the pattern of this development. The 2011 RTP's influence on growth contributes to regional cumulatively considerable impacts to population, housing and employment and would change the intensity of land use in some areas.

Mitigation Measures

The mitigation measures listed above for Impacts 3.12.1 and 3.12.2 would be applied as mitigation for this impact. In addition, the following measure would apply.

- Regional planning efforts will be used to build a consensus in the region to support changes in population, housing and employment to accommodate future growth while maintaining the quality of life in the region.

Significance after Mitigation

In order to accommodate the projected population, housing and employment totals assumed for 2035, the region will need to change land uses and increase the intensity of some existing land use. The cumulative impact would remain significant.

Public Utilities, Other Utilities & Services Systems

Impact 3.13.1

Construction and implementation of improvement projects could affect the level of police, fire and medical services in the County. With mitigation, this would be a less than significant impact.

Numerous agencies within multiple jurisdictions in the County provide fire protection, emergency medical services, and police services. Depending upon the timing, location, and duration of construction activities, several of the proposed improvement projects, including arterials, interchanges, and auxiliary lanes could delay emergency response times or otherwise disrupt delivery of emergency services. Emergency routes would be impaired if one or more lanes of a roadway in Kern County were closed off for construction. Traffic delays and prevention of access to calls for service could potentially be caused by the closure of these lanes.

While these impacts would be short-term in nature, they could be potentially significant. Each individual improvement project will be analyzed to determine the degree of impact to emergency services, as part of project-specific environmental review. Adherence to road encroachment permits by the implementing agency could reduce construction-related impacts to emergency vehicle access and response times. As part of the construction mitigation strategy, a traffic control plan should be prepared to further reduce impacts on traffic and emergency response vehicles. Additionally, there is the potential need for increased police, fire, and medical services at the construction sites of projects for safety purposes. The impact of the construction sites themselves on police, fire, and emergency medical services is anticipated to be short-term in nature and less than significant.

The Project includes several types of improvement projects that, upon completion, would require different levels of police, fire, and medical services. Projects involving new roadways are anticipated to require police, fire, and emergency medical services for safety purposes. In many cases, transit-related projects would involve the construction of transit stations. Upon completion, these transit stations would require police, fire, and emergency medical services. In some cases, the governing transit authority provides security. Additionally, the increased use of transit modes of transportation, such as buses and trains, would involve an increased need for police, fire, and emergency medical services for protection and rescue services.

Rail projects, other than transit stations, are anticipated to require minimal amounts of additional fire, police, and emergency medical services for safety purposes. The improvement of and the use of non-motorized transportation methods, such as bike routes, are anticipated to require minimal amounts of additional police, fire, and emergency medical services. If restrooms or drinking fountains are incorporated into non-motorized transportation projects, these uses would require a minimal amount of police, fire, and emergency medical for security and safety.

Public service and utility providers have historically accommodated increases in demand throughout the County. For the most part, improvement projects would not generate a substantial need for additional police, fire, and emergency medical services, except in the case where new facilities are constructed. Local jurisdictions are expected to be equipped to handle any increased demands for fire and medical services generated by facilities, like transit stations. If any new transit police staff or facility is deemed necessary (by the individual improvement project level CEQA documentation), it will need to be funded by the appropriate transit authority. The total projected demand for each of these types of projects is not anticipated to be significant, based on the demand for public service and utility for similar projects and on the current capacities of existing fire, police, and medical services.

As discussed in the Population and Housing section of this EIR, population in the County will increase significantly over the next 25 years, with or without the Project. In general, Kern COG does not anticipate that the Project will substantially affect population distribution on a regional basis. However, several of the transportation projects in the less developed areas of the region could experience a corresponding increase in demand because of the Project.

Depending on the amount of increase in population, the increase in the demand for these services has the potential to be a significant impact in those specific areas. However, any construction resulting from the Project within the County will be subject to further environmental review. With the following mitigation measures, this impact would be reduced to a level of insignificance.

Mitigation Measures

As part of individual improvement project-specific environmental review, implementation agencies will evaluate the impacts on police, fire, and medical services in the County. Appropriate mitigation measures should be identified for all impacts. The implementation of projects by agencies or local jurisdiction will be responsible for ensuring adherence to the mitigation measures. Kern COG will be provided with documentation indicating compliance with mitigation measures.

- Prior to construction, the implementation agency will ensure that all necessary local and state road and railroad encroachment permits are obtained. The implementation agency also will comply with all applicable conditions of approval. As deemed necessary by the governing jurisdiction, the road encroachment permits may require the contractor to prepare a traffic control plan in accordance with professional engineering standards prior to construction. Traffic control plans should include the following requirements:

  - Identify all roadway locations where special construction techniques (e.g., directional drilling or night construction) would be used to minimize impacts to traffic flow;
  - Develop circulation and detour plans to minimize impacts to local street circulation. This may include the use of signing and flagging to guide vehicles through and/or around the construction zone;
  - Schedule truck trips outside of peak morning and evening commute hours;
  - Limit lane closures during peak hours to the extent possible;
  - Use haul routes, minimizing truck traffic on local roadways, to the extent possible;
  - Include detours for bicycles and pedestrians in all areas potentially affected by individual improvement project construction;
  - Install traffic control devices as specified in the California Department of Transportation Manual of Traffic Controls for Construction and Maintenance Work Zones;
  - Develop and implement access plans for highly sensitive land uses such as police and fire stations, transit stations, hospitals, and schools. Access plans will be developed with the facility owner or administrator. To minimize disruption of emergency vehicle access, affected jurisdictions will be asked to identify detours for emergency vehicles, which will then be posted by the contractor. The facility owner or operator will be notified in advance of the timing, location, and duration of construction activities and the locations of detours and lane closures;
  - Store construction materials only in designated areas; and
  - Coordinate with local transit agencies for temporary relocation of routes or bus stops in work zones, as necessary.

- Projects requiring police protection, fire service, and emergency medical service will coordinate with the local fire department and police department to ensure that the existing public services and utilities will be able to handle the increase in demand for their services. If the current levels of service at the individual improvement project site are found to be inadequate, infrastructure improvements and personnel requirements for the appropriate public service will be identified in each individual improvement project's CEQA documentation.

- The growth inducing potential of individual projects will be carefully evaluated so that the full implications of the individual improvement project are understood. Individual environmental documents will quantify indirect impacts (growth that could be facilitated or induced) on public services and utilities. Lead and responsible agencies should then make any necessary adjustments to the applicable General Plan.

Significance After Mitigation

Implementation and monitoring of the above mitigation measures will provide the framework and direction for subsequent individual improvement project-specific mitigation designed to avoid or reduce the identified significant Project impacts to a less than significant level.

Impact 3.13.2

Demand for solid waste, wastewater, and potable water services in the County could be affected by construction and implementation of the projects. This would be a less than significant impact with mitigation.

Several of the projects have the potential to generate a significant amount of solid waste during construction through grading and excavation activities. Any increases in demand for wastewater and potable water services resulting from an individual improvement project are expected to be minimal during construction. Construction debris would be recycled or transported to the nearest landfill site and disposed of appropriately. Currently, several landfills in the region function at or below their permitted capacity. Therefore, the projects proposed are not anticipated to generate a significant impact on solid waste facilities during construction. Nevertheless, the amount of debris generated during individual improvement project construction would need to be evaluated prior to construction on an individual improvement project-by-project basis.

It is assumed that, upon completion, projects will require additional public services and utilities to handle increased demand for wastewater and solid waste services, increased demand for potable water, and, in some cases, increased demand for reclaimed water for landscaping purposes. These increases would need to be evaluated on a project-by-project basis. Projects involving roadway construction are anticipated to require potable or reclaimed water for landscaping purposes. These increases would need to be evaluated on a project-by-project basis.

Transit-related projects would involve the construction of transit stations in many cases. Incremental amounts of potable water would be generated at these transit stations for restrooms, public drinking water, and landscaping. Additionally, a minimal increase in the demand for potable water, wastewater service, and solid waste collection would be created by increased use of transit methods, such as buses and trains.

With the exception of transit-related rail, unless rail projects involve the construction of additional railways or facilities, they are not anticipated to require additional wastewater, solid waste, or potable water service. The improvement of and increased usage of non-motorized transportation methods, like bike routes, are not anticipated to require additional levels of solid waste, waste water, and potable water service, other than drinking fountains. If restrooms are incorporated into non-motorized transportation projects, these uses would also require minimal amounts of solid waste (for trash receptacles), wastewater (for toilets, water fountains, and faucets), and potable water (for faucets, drinking fountains, and landscaping) services.

Public service and utility providers have accounted for increases in the public needs throughout the County. In most cases, wastewater and potable water infrastructures function well below their capacities. In addition, solid waste facilities, including transfer stations and landfills, commonly accept levels of solid waste well below their maximum capacities. Based on the demand for public services and utilities for similar projects, and on the current capacities of existing public services and utilities, the local projected demand for each of these types of projects is not anticipated to be significant but will need to be analyzed on a project-by-project basis.

Mitigation Measures

As part of individual improvement project-specific environmental review, implementation agencies will evaluate the impacts on demand for solid waste, wastewater, and potable water services in the County. Appropriate mitigation

measures should be identified for all impacts. The implementation agencies or local jurisdiction will be responsible for ensuring adherence to the mitigation measures. Kern COG will be provided with documentation indicating compliance to mitigation measures.

- Projects requiring wastewater service, solid waste collection, or potable water service will coordinate with the local public works department to ensure that the existing public services and utilities would be able to handle the increase. If the current infrastructure servicing the individual improvement project site is found to be inadequate, infrastructure improvements for the appropriate public service utility will be identified in each individual improvement project's CEQA documentation.

- Reclaimed water will be used for landscaping purposes instead of potable water wherever feasible.

- Each of the proposed projects will comply with applicable regulations related to solid waste disposal.

- The construction contractor will work with the County Recycling Coordinator to ensure that source reduction techniques and recycling measures are incorporated into individual improvement project construction.

- The amount of solid waste generated during construction will be estimated prior to construction, and appropriate disposal sites will be identified and utilized.

Significance After Mitigation

Implementation and monitoring of the above mitigation measures will provide the framework and direction for subsequent improvement project-specific mitigation designed to avoid or reduce the identified significant Project impacts to a less than significant level.

Impact 3.13.3

The transportation of construction materials to and from the sites during individual improvement project construction could cause accumulation of soil on roadways surrounding the construction sites. This would be a less than significant impact with mitigation.

Hauling trucks could track soil from the construction site onto adjacent streets during construction of projects, particularly those involving excavation. Since street cleaning activities typically occur only once a month in a particular area, increased soil on local streets would increase the demand for street cleaning. The incorporation of the following mitigation measure would reduce this impact to a level less than significant.

Mitigation Measures

As part of individual improvement project environmental review, individual agencies will evaluate the impacts resulting from soil accumulation during construction of the projects. Appropriate mitigation measures will be identified for all impacts. The implementation agencies or local jurisdiction will be responsible for ensuring adherence to the mitigation measures. Kern COG will be provided with documentation indicating compliance with mitigation measures.

Implement appropriate measures, such as the washing of construction vehicles undercarriages before leaving the construction site or increasing the use of street cleaning machines, to reduce the amount of soil on local roadways as a result of construction.

Significance After Mitigation

Implementation and monitoring of the above mitigation measures will provide the framework and direction for subsequent project-specific mitigation designed to avoid or reduce the identified significant Project impacts to a less than significant level.

Impact 3.13.4

It is possible that underground utility lines (sewer, gas, electricity, telephone and water) could be uncovered and potentially severed because of construction of projects. This would be considered a less than significant impact with mitigation.

The potential to encounter underground utility lines, and potentially sever those lines, is a possibility with any groundbreaking in the Kern region. However, prior to construction, the individual improvement project implementation agency would be required to incorporate the locations of existing utility lines into the construction schedule. Prior knowledge and avoidance of existing utility lines during construction would reduce this impact to a level less than significant.

Mitigation Measures

- As part of individual improvement project environmental review, implementation agencies will evaluate the impacts resulting from the potential for severing underground utility lines during construction of the projects. Appropriate mitigation measures will be identified for all impacts. The implementation agencies or local jurisdiction will be responsible for ensuring adherence to mitigation measures. Kern COG will be provided with documentation indicating compliance with mitigation measures.

- Prior to construction, the implementing agency or contractor will identify the locations of existing utility lines. All known utility lines will be avoided during construction.

Significance After Mitigation

Implementation and monitoring of the above mitigation measures will provide the framework and direction for subsequent individual improvement project-specific mitigation designed to avoid or reduce the identified significant Project impacts to a less than significant level.

Cumulative Impact 3.13.5

Growth and development in the County will increase substantially by 2035. The 2011 RTP, by increasing mobility and including transportation measures, influences the pattern of this development. The 2011 RTP's influence on growth contributes to regional cumulatively considerable impacts to police and fire and emergency services, solid waste services, and other public services in the County.

Growth and development in the region will require additional police, fire, and other emergency and public services, and additional solid waste services. Such needs will be determined on a project-level basis by individual service providers.

Mitigation Measures

- The growth inducing potential of individual projects shall be carefully evaluated so that the full implications of the projects are understood. Individual environmental documents shall quantify indirect impacts (growth that could be facilitated or induced) on public services and utilities to the extent feasible.
- The California Integrated Waste Management Board shall continue to enforce solid waste diversion mandates that are enacted by the Legislature.
- Local jurisdictions shall continue to adopt programs to comply with state solid waste diversion rate mandates and, where possible, shall encourage further recycling to exceed these rates.
- Local jurisdictions shall implement or expand city or county-wide recycling and composting programs for residents and businesses. This could include extending the types of recycling services offered (e.g., to include food and green waste recycling) and providing public education and publicity about recycling services.
- Project implementation agencies shall coordinate regional approaches and strategic siting of waste management facilities.
- Project implementation agencies shall prioritize siting of new solid waste management facilities including recycling, composting, and conversion technology facilities in conjunction with existing waste management or material recovery facilities.
- Project implementation agencies shall increase programs to educate the public and increase awareness of reuse, recycling, composting, and green building benefits and raise consumer education issues at the county and city level, as well as at local school districts and education facilities.

Significance After Mitigation

The cumulative impacts of providing additional public services would remain significant.

Transportation/Traffic

Impact 3.14.1

Kern COG was responsible for preparing existing and future LOS analysis using its Regional Traffic Model. Results of the 2035 LOS segment analysis with the Project along the RTP Regionally Significant Roads System are reflected in Figures 3-17 and 3-18. Figures 2-4 through 2-7 in Section 2 of this EIR provide a graphic display of the street and highway improvement projects included in the RTP. Figures 3-19 and 3-20 provide the resulting LOS assuming the No Build condition. The No Build condition assumes that existing streets and highways and only those improvements contained in the approved Transportation Improvement Program through the Year 201_, would be in place. When the improvements associated with the Project (combined with the projects contained in the 2011 RTP) are added to the model, significantly fewer deficient segments result compared to the "No Build" Alternative.

Results of the LOS deficiencies along the regionally significant system under the No Project Alternative are provided in Chapter 4 of the 2011 RTP on file with Kern COG and on the Kern COG Website: www.kerncog.org/publications.

The resultant number of deficient facilities along the Regionally Significant Roads System with and without the Project indicates that when the Individual improvement project improvements are made to the regionally significant street and highway system, LOS conditions within the Kern region will significantly improve. Capacity increasing projects that would improve these deficient levels of service are not included in the Project.

Congestion decreases and transit use increases significantly with the Project compared to the No Build Alternative. In addition, employment choices are increased for both automobile and transit users. Because one of the stated objectives of the Project is to reduce congestion and improve mobility, this is considered a significant beneficial impact.

Mitigation Measures

Measures intended to reduce vehicle miles traveled and reduce congestion are part of the 2011 RTP. These include: increasing rideshare and work-at-home opportunities to reduce demand on the transportation system, investments in non-motorized transportation and maximizing the benefits of the land use/transportation connection, other Travel Demand Management measures described in the 2011 RTP and in local agency General Plans, and key transportation investments targeted to reduce congestion levels and improve LOS.

Significance After Mitigation

Implementation of measures beyond those institutionally and economically feasible measures identified in the 2011 RTP would be expected to reduce congestion levels and improve LOS, however even with this mitigation, the 2035 levels of service would still include a number of segments that will operate at deficient levels or at LOS E and F. Therefore, the congestion levels would remain a significant impact.

Impact 3.14.2

The proposed Project includes a series of individual improvement projects and programs (street and highway, transit, bicycle and trail, pedestrian and other projects) to help improve the multi-modal transportation system. Implementation of these projects and programs will improve transportation system performance. In addition, the Project includes numerous individual transportation projects and programs all aimed at implementing the RTP goals. The overall impact of the Project on regional transportation therefore is considered a beneficial impact.

The overarching goal for the Project is to develop a fully integrated, multi-modal transportation system to serve as a catalyst to enhance the quality of life enjoyed by the current and future residents of Kern County. From a transportation and circulation perspective, the implementation of the Project is not anticipated to result in any perceived negative effect on transportation system performance, but will have the effect of improving transportation system performance regionally.

Mitigation Measure

This impact is considered beneficial; mitigation measures are not required.

Significance After Mitigation

Less than significant.

Impact 3.14.3

Individual improvement projects may increase traffic volumes not only on streets and highways, as well as at at-grade highway-rail crossings.

Mitigation Measure

As part of individual improvement project environmental review, individual agencies will consider impacts and plan for grade separations along major thoroughfares, identify to the extent feasible, improvements to existing at-grade highway-rail crossings caused by increases in traffic volumes, and provide, to the extent possible, appropriate fencing to limit the access of trespassers onto the railroad right-of-way. The implementation agencies or local jurisdiction will be responsible for ensuring adherence to the mitigation measure. Kern COG will be provided with documentation indicating compliance with the mitigation measure.

Significance After Mitigation

Less than significant.

Energy and Energy Conservation

Impact 3.15.1 - Energy Consumption & Conservation Impacts

Construction of the transportation improvements programmed in the proposed 2011 RTP would increase energy consumption due to the operation of construction equipment and vehicles. Given the number of large-scale improvements programmed into the proposed 2011 RTP, the increase in energy consumption associated with construction activities would be substantial. Although construction equipment and vehicles would be operated in accordance with all applicable rules and regulations, the substantial increase in energy consumption associated with the construction equipment and vehicles primarily powered by nonrenewable fuels under the proposed 2011 RTP is considered a significant impact.

Operation of the transportation improvements identified in the proposed 2011 RTP would increase the total and per capita amount of gasoline and diesel fuel consumption associated with the regional transportation network. Since gasoline and diesel are nonrenewable, petroleum-based fuels, the increase in gasoline and diesel consumption under the proposed 2011 RTP is considered a significant impact.

In addition to increased energy consumption directly associated with transportation activities, energy consumption would also increase as a result of new lighting including, but not limited to, lighting for streets stops or stations, transit station parking structures, and rail tunnels; traffic signals; electronic signage; and other ancillary electric, natural gas, or other energy-consuming components of transportation improvements that would be implemented under the proposed 2011 RTP. Increased energy consumption levels associated with these ancillary project features are considered a significant impact.

The proposed 2011 RTP includes goals and policies supporting smart growth through financial incentives, housing and mixed-use projects at existing and planned transit stations, support for local efforts to develop pedestrian master plans, and other activities that tend to reduce GHG emissions. However, since Kern COG has no direct authority over land use planning and other local decisions, the extent to which the goals and policies supporting smart growth would be implemented by local jurisdictions is unknown.

Since the 2011 RTP (2035 Planned scenario) would decrease highway congestion and enhance alternative modes relative to the No Project (2007 RTP) and No Build alternatives (2035 growth versus existing and programmed projects), it would result in potentially beneficial effects on the consumption and conservation of energy resources.

Mitigation Measures

The following mitigation measures shall be implemented by project implementation agencies to reduce the significant energy impacts of the proposed 2011 RTP. In addition, climate change mitigation measures referenced in this Chapter, Section 3.5 will also contribute to the mitigation of energy consumption and energy conservation impacts.

- Project implementation agencies shall review energy impacts as part of any CEQA-required project-level environmental analysis and specify appropriate mitigation measures for any identified energy impacts.

- During the design and approval of transportation improvements implemented under the proposed 2011 RTP, the following energy efficiency measures shall be incorporated when applicable:

  - The design or purchase of any lighting fixtures including but not limited to lighting at transit stations, arterials or freeways, and parking structures/lots shall achieve energy reductions beyond an estimated baseline energy use for such lighting.

- LED technology shall be used for all new or replaced traffic lights, rail signals, and other features compatible with LED technology.

- Local agencies should consider various best practices and technological improvements that can reduce the consumption of fossil fuels such as:

  - Expanding light-duty vehicle retirement programs
  - Increasing commercial vehicle fleet modernization
  - Implementing driver training modules on fuel consumption
  - Replacing gasoline powered mowers with electric mowers
  - Reducing idling from construction equipment
  - Incentivizing alternative fuel vehicles and equipment
  - Developing infrastructure for alternative fueled vehicles
  - Implementing truck idling rules, devices, and truck-stop electrification
  - Requiring electric truck refrigerator units
  - Reducing locomotives fuel use
  - Modernizing older off-road engines and equipment
  - Encouraging freight mode shift
  - Limit use and develop fleet rules for construction equipment
  - Requiring zero-emission forklifts

- Local agencies should include energy analyses in environmental documentation and general plans with the goal of conserving energy through the wise and efficient use of energy. For any identified energy impacts, appropriate mitigation measures should be developed and monitored. Kern COG recommends the use of Appendix F, Energy Conservation, of the *CEQA Guidelines.*

- Local agencies should streamline permitting and provide public information to facilitate accelerated construction of solar and wind power.

- Local agencies should adopt a "Green Building Program" to promote green building standards. Green buildings can reduce local environmental impacts, regional air pollutant emissions and global greenhouse gas emissions. Green building standards involve everything from energy efficiency, usage of renewable resources and reduced waste generation and water usage. For example, water-related energy use consumes 19 percent of the state's electricity. The residential sector accounts for 48 percent of both the electricity and natural gas consumption associated with urban water use. While interest in green buildings has been growing for some time, cost has been a main consideration as it may cost more up front to provide energy-efficient building components and systems. Initial costs can be a hurdle even when the installed systems will save money over the life of the building. Energy efficiency measures can reduce initial costs, for example, by reducing the need for over-sized air conditioners to keep buildings comfortable. Undertaking a more comprehensive design approach to building sustainability can also save initial costs through reuse of building materials and other means.

  A comprehensive study of the value of green building savings is the 2003 report to California's Sustainable Building Task Force. In the words of the report: "While the environmental and human health benefits of green building have been widely recognized, this comprehensive report confirms that minimal increases in upfront costs of about 2% to support green design would, on average, result in life cycle savings of 20% of total construction costs -- more than ten times the initial investment. For example, an initial upfront investment of up to $100,000 to incorporate green building features into a $5 million project would result in a savings of $1 million in today's dollars over the life of the building."

- Local governments should alter zoning to improve jobs/housing balance, create communities where people live closer to work, and bike, walk, and take transit as a substitute for personal auto travel. Creating walkable, transit oriented nodes would generally reduce energy use and greenhouse gas emissions. Residential energy use (electricity and natural gas) accounts for 14 percent of California's greenhouse gas emissions. It is estimated that households in transit-oriented developments drive 45 percent less than residents in auto-dependent neighborhoods. In addition, mixed land uses (i.e., residential developments near work places, restaurants, and shopping centers) with access to public transportation have been shown to save consumers up to 512 gallons of gasoline per year. Furthermore, studies have shown that the type of housing (such as multi-family) and the size of a house have strong relationships to residential energy use. Residents of single-family detached housing consume over 20 percent more primary energy than those of multifamily housing and 9 percent more than those of single-family attached housing.

- Kern COG shall work with its member agencies to increase the number of AFVs (i.e., vehicles not powered strictly by gasoline or diesel fuel) both in municipally owned vehicles, as well as those owned by franchisees of these cities, such as trash haulers, green waste haulers, street sweepers, and curbside recyclable haulers.

- Bid solicitations for construction of projects proposed in the 2011 RTP and subsequent RTP updates shall preference the use of alternative formulations of cement and asphalt with reduced GHG emissions to the extent that such cement and asphalt formulations are available at a reasonable cost in the marketplace. Solicitations shall also preference the recycling of construction waste and debris if market conditions permit.

- Kern COG shall continue to develop, in coordination with the California Air Resources Board, a data and information collection and analysis system that provides an understanding of the energy demand and greenhouse gas emissions in the Kern region.

- All mitigation measures listed in Chapter 3, Section 3.5.1 are incorporated by reference and shall be implemented by implementing agencies to address energy conservation impacts.

Significance After Mitigation

Implementation and monitoring of the above mitigation measures will provide the framework and direction for subsequent individual improvement project-specific mitigation designed to avoid or reduce the identified significant Project impacts to a less than significant level.

SECTION 2.0 INTRODUCTION / PROJECT DESCRIPTION

An EIR is required to provide a detailed project description. This description is to consist of:

- *The project's location;*
- *EIR objectives including an underlying project purpose, characteristics, and scope; and*
- *A statement of the EIR's intended uses.*

See CEQA Guidelines, Section 15124.

2.1 PURPOSE

The purpose of this Subsequent Environmental Impact Report (SEIR) is to provide local decision-makers and the public with an objective analysis of the potential environmental consequences related to the implementation of projects and programs included in the 2011 Regional Transportation Plan (RTP). The information presented in this document is intended to provide a full disclosure of the potential impacts and to increase public awareness and participation in the regional transportation planning process.

Requirement to Prepare a Subsequent EIR

According to CEQA, when an EIR has been certified or a negative declaration adopted for a project, no subsequent EIR shall be prepared for that project unless the lead agency determines, on the basis of substantial evidence in the light of the whole record, one or more of the following:

- Substantial changes are proposed in the project which will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;
- Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR or Negative Declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or
- New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete or the Negative Declaration was adopted, shows any of the following:

    - The project will have one or more significant effects not discussed in the previous EIR or negative declaration
    - Significant effects previously examined will be substantially more severe than shown in the previous EIR
    - Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative
    - Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

In this case, Kern COG understands that 2011 RTP improvement projects will change or the timing of those projects will change. As a result of these changes, rather than prepare a complete new EIR, Kern COG desires to use the previous EIR and Addendum No. 1 and Addendum No. 2 and update/change sections to address RTP project changes, as well as greenhouse gas/global warming (Climate Change) issues.

2.2 PROJECT LOCATION

Generally, the western portion of Kern County is located within California's Southern San Joaquin Valley and the eastern portion is generally located within the Sierra Nevada and high desert region (reference Figure 2-1). Encompassing 8,171 square miles, the County is situated along State Route (SR) 99 approximately 100 miles north of Los Angeles. The County has a range of altitudes from 206 feet above sea level near the City of Delano to the highest point at 8,755 feet at the summit of Sawmill Mountain on the south line of the County. As of 2008, Kern County's estimated population is approximately 800,458 (reference Table 2-1).

2.3 PROJECT CHARACTERISTICS

The project, as defined by CEQA Statutes, Section 21065, is the preparation of the 2011 Regional Transportation Plan. Kern Council of Governments (Kern COG) is in the process of preparing the RTP as required by Section 65080 et seq., of Chapter 2.5 of the *California Government Code* as well as federal guidelines pursuant to the requirements of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). The RTP must also meet Transportation Conformity for the Air Quality Attainment Plan per 40 CFR Part 51 and 40 CFR Part 93. In addition, the RTP must address requirements set forth in Assembly Bill 32, the California Global Warming Solutions Act of 2006. Finally, the California Transportation Commission has prepared guidelines (most recently adopted by the Commission in April 2010 including an Addendum addressing Climate Change and Greenhouse Gas Emissions adopted by the Commission on May 29, 2008) to assist in the preparation of RTPs pursuant to Section 14522 of the *Government Code*.

As the designated Regional Transportation Planning Agency (RTPA), Kern COG is mandated by state and federal law to update the Regional Transportation Plan every four (4) years. The 2007 RTP, adopted on May 17, 2007 by Kern COG, included a list financially constrained improvement projects. On January 15, 2009, Kern COG amended the 2007 RTP (Amendment #1) to reflect changes to the list of projects and certified an Addendum EIR (AEIR) to address potential environmental effects. Improved project financing sources and project delivery schedules reflected in the 2007 RTP and in Amendment #1 were revised again as part of RTP Amendment #2 approved on September 17, 2009.

Chapter 4 of the RTP sets forth plans of action for the region to pursue and meet identified transportation needs and issues. Planned investments must be consistent with the goals and policies of the Plan, and must be financially constrained. These projects are listed in the Constrained Program of Projects (reference Table 2-2) and were modeled in the Air Quality Conformity Analysis.

Forecasting methods in the RTP primarily use the "market-based approach" based on demographic data and economic trends. For best results, the RTP also uses the "build out" method which provides the best estimates for growth in all areas of the County. Within each element of the RTP, assumptions are made that guide the goals, policies and actions. Those assumptions include: demographic projections, land use forecasts, air quality models, performance indicators, capital/operations costs, cost of alternatives, timeframe (short-and long-term), environmental resources and methodology.

Alternative scenarios are not addressed in RTP; they are, however addressed and analyzed for their feasibility in this SEIR, as required by CEQA (15126(d), 15125.6(a)). From the SEIR, the alternatives are identified and described and projects that deliver the most benefit were selected.

Figure 2-1
Location of Kern County in California

TABLE 2-1
Kern County Population and Housing Growth Trends

								1980-2010 Historic Growth		2010-2035 Forecast Growth	
	Census	Census	Census	Forecast	Forecast	Forecast	Forecast	Average Annual		Average Annual	
Year	1980	1990	2000	2010	2020	2030	2035	Rate	Increase	Rate	Increase
Kern County											
Population	403,089	543,477	661,653	845,600	1,010,800	1,208,200	1,321,000	2.4%	14,750	1.8%	19,016
Households	139,881	181,480	208,655	271,327	319,200	381,600	417,200	2.2%	4,382	1.7%	5,835
Metro Bakersfield											
Population	228,000	329,100	409,800	533,461	640,536	764,941	848,487	2.8%	10,182	1.8%	12,601
Households	89,500	120,000	134,100	172,970	203,753	244,722	269,840	2.2%	2,782	1.8%	3,875
Arvin											
Population	6,863	9,286	12,956	17,100	22,800	29,100	33,400	3.0%	341	2.6%	652
Households	1,946	2,385	3,010	3,800	5,000	6,300	7,100	2.2%	62	2.5%	132
Bakersfield											
Population	105,611	174,820	246,899	341,700	437,800	541,600	609,600	3.8%	7,870	2.3%	10,716
Households	39,602	62,516	83,445	111,900	141,300	172,600	192,900	3.4%	2,410	2.2%	3,240
California City											
Population	2,743	5,955	8,385	15,300	20,600	26,700	30,700	5.6%	419	2.7%	616
Households	990	2,119	3,067	4,500	5,900	7,400	8,400	4.9%	117	2.5%	156
Delano											
Population	16,491	22,762	39,499	55,100	68,000	81,400	90,000	3.9%	1,287	1.9%	1,396
Households	4,912	6,236	8,411	10,600	12,900	15,200	16,700	2.5%	190	1.8%	244
Maricopa											
Population	946	1,193	1,111	1,150	1,250	1,340	1,400	0.6%	7	0.8%	10
Households	338	416	404	410	430	440	450	0.6%	2	0.4%	2
McFarland											
Population	5,151	7,005	9,835	13,800	17,000	20,400	22,500	3.2%	288	1.9%	348
Households	1,399	1,685	1,989	2,800	3,600	4,500	5,100	2.3%	47	2.4%	92
Ridgecrest											
Population	15,929	28,295	24,927	28,700	32,900	37,000	39,400	1.9%	426	1.3%	428
Households	5,762	10,349	9,826	11,100	12,600	14,000	14,900	2.2%	178	1.2%	152
Shafter											
Population	7,010	8,409	12,731	16,300	22,700	30,300	35,500	2.8%	310	3.1%	768
Households	2,284	2,558	3,292	4,200	6,300	8,900	10,800	2.0%	64	3.7%	264
Taft											
Population	5,316	5,902	8,811	9,300	11,600	14,000	15,500	1.8%	133	2.0%	248
Households	2,096	2,209	2,233	2,300	3,000	3,800	4,300	0.3%	7	2.5%	80
Tehachapi											
Population	4,126	5,791	11,125	14,000	18,200	22,800	25,800	4.0%	329	2.4%	472
Households	1,534	2,335	2,533	3,300	4,200	5,300	5,900	2.5%	59	2.3%	104
Wasco											
Population	9,613	12,412	21,263	26,000	33,100	40,700	45,700	3.3%	546	2.2%	788
Households	3,001	3,471	3,971	5,000	6,700	8,500	9,800	1.7%	67	2.7%	192
Unincorporated											
Population	223,290	261,647	264,111	307,150	324,850	362,860	371,500	1.1%	2,795	0.8%	2,574
Households	75,947	85,201	86,474	111,417	117,270	134,660	140,850	1.3%	1,182	0.9%	1,177

Source: Kern COG, March 2010

The RTP is used to guide the development of the Regional Transportation Improvement Program (RTIP). The RTIP is the programming document used to plan the construction of regional transportation projects and requires State Department of Transportation (Caltrans) approval. No project-level assessments of environmental impacts will be addressed by this EIR. The RTP is also used as a transportation planning document by each of the twelve member jurisdictions of Kern COG. The members include the County of Kern and the cities of Arvin, Bakersfield, California City, Delano, Maricopa, McFarland, Ridgecrest, Shafter, Taft, Tehachapi, and Wasco.

The RTP identifies the region's mobility needs and issues through to the year 2035, sets forth an action plan of projects and programs to address the needs consistent with the adopted policies, and documents the financial resources needed to implement the plan. Additional areas of emphasis and policy initiatives in the 2011 RTP include Climate Change (including a Climate Change Plan and other greenhouse gas policies), Environmental Justice, Goods Movement, and Blueprint Planning. In addition, the 2011 RTP will include updated project lists and updated performance measures.

The 2011 Regional Transportation Plan promotes a "balanced" transportation system. It calls for increased investments in alternative transportation modes, while accommodating a necessary amount of new highway capacity. Heavier emphasis on alternative modes, above and beyond those already incorporated in the RTP, may be desired or preferred but because of financial constraints, alternative mode additions are not financially feasible in the timeframe of the RTP.

The Constrained Program of Projects (reference Table 2-2) includes projects that will move the region toward a financially constrained and balanced system. Constrained projects have undergone air quality conformity analyses to ensure that they contribute to the Kern region's compliance with state and federal air quality rules. The Unconstrained Program of Projects (reference Chapter 4 of the 2011 RTP) incorporates the region's unbudgeted "vision". These projects represent alternatives that could be moved to the constrained program if support for an individual project remains strong and if project funding is identified.

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

Unconstrained projects are not included in the air quality conformity analysis. In the future, as the funding picture changes and community values and priorities for transportation projects become redefined and honed, unconstrained projects may be moved to the constrained program. Should this occur, the 2011 RTP would be amended and a new assessment of the Plan's conformity with state and federal air quality rules and standards would be undertaken.

Each element in the RTP addresses proposed actions to implement the goals and policies identified in Chapter 2 of the RTP – Transportation Planning Polices. These actions outline specifically how the goals of the Plan will be accomplished.

TABLE 2-2
Constrained List of Projects

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2011 through 2015 - Major Highway Improvements

Project	Location	Scope	YOE Cost	Start
Route 14	Inyokern	Redrock / Inyokern Rd to Rt 178 - widen to four lanes (Phase1)	42,000,000	2014
Route 46	Lost Hills	SLO County Line to Brown Material Rd - widen to four lanes (Segments 1 -3)	232,070,000	2009
Route 58	Metro Bkfd	Rosedale Hwy. @ Minkler Spur / Landco - construct grade separation	17,400,000	2013
Route 58	Metro Bkfd	Rosedale Hwy - Calloway Dr to SR 99 - widen to six lanes; grade separation at Landco	20,600,000	2011
Route 58	Metro Bkfd	Rosedale Hwy - Allen Rd to Calloway Dr - widen to four /six lanes	8,800,000	2011
Route 58	Bakersfield	Rt 99 to Cottonwood Rd. - widen to six lanes	50,000,000	2015
Route 99	Metro Bkfd	Hosking Ave - construct interchange	35,000,000	2010
Route 99	Bakersfield	Wilson Rd to Rt 119 - widen to eight lanes	52,000,000	2012
Route 99	Bakersfield	Olive Drive - construct interchange upgrades	6,100,000	2012
Route 99	Bakersfield	Rt 204 to 7th Standard Rd - widen to eight lanes (Phase 1)	12,000,000	2012
Route 99	Delano	Woollomes Ave - construct interchange upgrades	5,000,000	2011
Route 178	Bakersfield	Morning Dr to Vineland Rd - new 4/6 lane freeway w/ interchange	58,800,000	2011
Route 178	Bakersfield	Vineland Rd to Miramonte Dr - widen to four lanes	36,500,000	2011
Challenger Dr. Ext.	Tehachapi	Viena St to Dennison Rd - construct new street	1,500,000	2011
W Ridgecrest Blvd	Ridgecrest	Mahan St to China Lake Blvd - widen to four lanes	10,200,000	2011
Westside Parkway	Metro Bkfd	SR 99 / Oak St to Heath Rd - construct local freeway	340,000,000	2009
Hageman Flyover	Bakersfield	Knudsen Dr to Rt 204 - construct four/six lane extension	68,900,000	2012
Hageman Grade-Sep	Metro Bkfd	Hageman/Santa Fe Way @ BNSF - construct grade separation	39,500,000	2011
Oak St/24th Street	Bakersfield	Rt 178 (24th St) and Oak St - construct improvements	19,100,000	2012
Centennial Corridor	Bakersfield	I-5 to SR-58 - construct new freeway and/or operational improvements	645,000,000	2015
24th Street	Bakersfield	Rt 178 SR-99 to M Street - widen to six/eight lanes	34,000,000	2013
		Sub-total	$1,734,470,000	

2016 through 2020 - Major Highway Improvements

Project	Location	Scope	YOE Cost	Start
Route 14	Inyokern	Redrock / Inyokern Rd to Rt 178 - widen to four lanes (Phase 2)	$42,000,000	2018
Route 178	Metro Bkfd	West of Fairfax Rd to west of Morning Drive - widen to six lanes	806,000	2020
Route 178	Metro Bkfd	West of Morning Dr to Vineland Rd - widen to six lanes	806,000	2020
7th Standard Rd	Shafter/Bkfd	Rt 43 to Santa Fe Way - widen to four/six lanes	11,500,000	2016
West Beltway	Metro Bkfd	Rosedale Hwy to Pacheco Rd - construct four/six lane facility	173,200,000	2018
		Sub-total	$228,312,000	

TABLE 2-2
Constrained List of Projects (cont'd)

2021 through 2025 - Major Highway Improvements

Project	Location	Scope	YOE Cost	Start
Route 14	Inyokern	Redrock / Inyokern Rd to Rt 178 - widen to four lanes (Phase 3)	$32,000,000	2022
Route 58	Bakersfield	Rosedale Hwy - Rt 43 to Allen Rd - widen to four lanes	59,000,000	2025
Route 58	Bakersfield	Rt 99 to Cottonwood Rd - widen to eight lanes	47,400,000	2025
Route 65	Bakersfield	James Rd to Merle Haggard Dr - widen to four lanes	$3,000,000	2021
Route 119	Taft	Cherry Ave to Elk Hills Rd (Phase 1, bypass) - widen to four lanes	115,000,000	2022
Route 178	Bakersfield	At Rt 204 - construct interchange	25,700,000	2025
Route 178	Bakersfield	Miramonte to Rancheria - widen to four lanes	11,700,000	2025
Route 184	Bakersfield	At Union Pacific Railroad - construct grade separation	26,400,000	2025
Route 204	Bakersfield	Airport Drive to Rt 178 - widen to six lanes	38,500,000	2025
Route 204	Bakersfield	F St - construct interchange	25,700,000	2025
US 395	Ridgecrest	Between Rt 178 and China Lake Blvd - construct passing lanes	20,000,000	2022
West Beltway	Metro Bkfd	Taft Hwy to Pacheco Rd - construct four/six lane facillity	80,400,000	2025
		Sub-total	$484,800,000	

2026 through 2030 - Major Highway Improvements

Project	Location	Scope	YOE Cost	Start
Route 46	Lost Hills	Brown Material Rd to I-5 - interchange upgrade at I-5 (Phase 4)	$97,000,000	2026
Route 119	Bakersfield	I-5 to Buena Vista - widen to four lanes	31,300,000	2026
Route 178	Bakersfield	Vineland to Miramonte - new Interchange; widen to six lanes	231,500,000	2028
Route 178	Bakersfield	Existing west terminus to Oswell St - widen to eight lanes	140,500,000	2026
Route 184	Bakersfield	Panama Rd to Rt 58 - widen to four lanes	10,500,000	2029
Route 184	Bakersfield	Morning Dr to Rt 178 - widen to four lanes	5,000,000	2026
West Beltway	Metro Bkfd	Rosedale Hwy to Seventh Standard Rd - new four/six lane facility	128,500,000	2028
		Sub-total	$644,300,000	

2031 through 2035 - Major Highway Improvements

Project	Location	Scope	YOE Cost	Start
Route 58	Bakersfield	At various locations - ramp improvements	$32,600,000	2033
Route 99	Bakersfield	At Olive Drive - reconstruct interchange	108,000,000	2033
Route 99	Bakersfield	At Snow Rd - construct new interchange	138,200,000	2033
Route 99	Bakersfield	Rt 204 to 7th Standard Rd - widen to eight lanes (Phase 2)	90,800,000	2033
Route 99	Bakersfield	At various locations - ramp improvements	37,000,000	2033
Route 119	Taft	Elk Hills - County Rd to Tupman Ave - widen to four lanes (Phase 2)	48,000,000	2033
Route 178	Bakersfield	At Rt 204 and 178 - reconstruct freeway ramps	50,000,000	2033
Route 178	Bakersfield	At various locations - ramp improvements	37,000,000	2033
Route 184	Lamont	Rt 58 to Rt 178 - widen to four lanes	90,000,000	2033
		Sub-total	$631,600,000	
		Total Major Highway Improvements	$3,723,482,000	

TABLE 2-2
Constrained List of Projects (cont'd)

2011 through 2035 - Local Streets and Roads

Project	Location	Scope	YOE Cost	Start
Various Locations	Metro Bkfd	Bridge and street widening; reconstruction	$338,000,000	
Various Locations	Metro Bkfd	Signalization	15,000,000	
Various Locations	Rosamond	Street widening; signalization	112,000,000	
Various Locations	Countywide	Transportation Control Measures	386,000,000	
Various Locations	Countywide	Bridge and street widening; reconstruction; signalization	460,000,000	
		Sub-total	$1,311,000,000	

2011 through 2035 - Transit

Project	Location	Scope	YOE Cost	Start
	Metro Bkd	Full size natural gas buses - 120 replacement buses	$45,000,000	
	Metro Bkd	Full size natural gas buses - 120 new buses	45,000,000	
	Various	Midsize natural gas buses - 120 replacement buses	6,000,000	
	Various	Midsize natural gas buses - 120 new buses	6,000,000	
	Various	Mini van / buses - 45 replacement buses	1,800,000	
	Metro Bkfd	2 transfer stations	3,000,000	
	Metro Bkfd	ITS related improvements / upgrades	3,000,000	
	Various	Park and Ride Lots (750 spaces)	3,000,000	
		Sub-total	$112,800,000	

2011 through 2035 - Non-motorized

Project	Location	Scope	YOE Cost	Start
Various locations	Metro Bkfd	Construct Class I or Class IIII Bike Path; striping; signage	$11,250,000	
Various locations	Metro Bkfd	Construct Pedestrian Enhancement Improvements	11,250,000	
Various locations	Countywide	Construct Class I or Class IIII Bike Path; striping; signage	7,500,000	
Various locations	Countywide	Construct Pedestrian Enhancement Improvements	7,500,000	
		Sub-total	$37,500,000	

2011 through 2035 - Freight Rail

Project	Location	Scope	YOE Cost	Start
Freight Rail	Tehachapi	Double-track sections from Bakersfield to Mojave	$111,700,000	In Progress
Freight Rail	Shafter	Shafter Intermodal Rail Facility/Inland Port (Phase I)	30,000,000	In Progress
		Sub-total	$141,700,000	

2011 through 2035 - Passenger Rail

Project	Location	Scope	YOE Cost	Start
Passenger Rail	Bakersfield	Highspeed Rail Station - Bakersfield	$50,000,000	2015
Passenger Rail	Region	High Speed Rail Alignment and Facilities Fresno to Bakersfield	819,500,000	2012
Passenger Rail	Region	High Speed Rail Alignment and Facilities Bakersfield to Palmdale	3,000,000,000	2015
Passenger Rail	Shafter/Wasco	High Speed Rail Heavy Maintenance Facility	450,000,000	2012
		Sub-total	$4,319,500,000	

TABLE 2-2
Constrained List of Projects (cont'd)

2011 through 2035 - Summary of Constrained Projects

Program Category	Totals
Major Highway Improvements 2011-2015	$1,734,470,000
Major Highway Improvements 2016-2035	1,989,012,000
Local Streets and Roads	1,311,000,000
Transit	112,800,000
Non-motorized	37,500,000
Freight Rail	141,700,000
Grand Total	$5,326,482,000

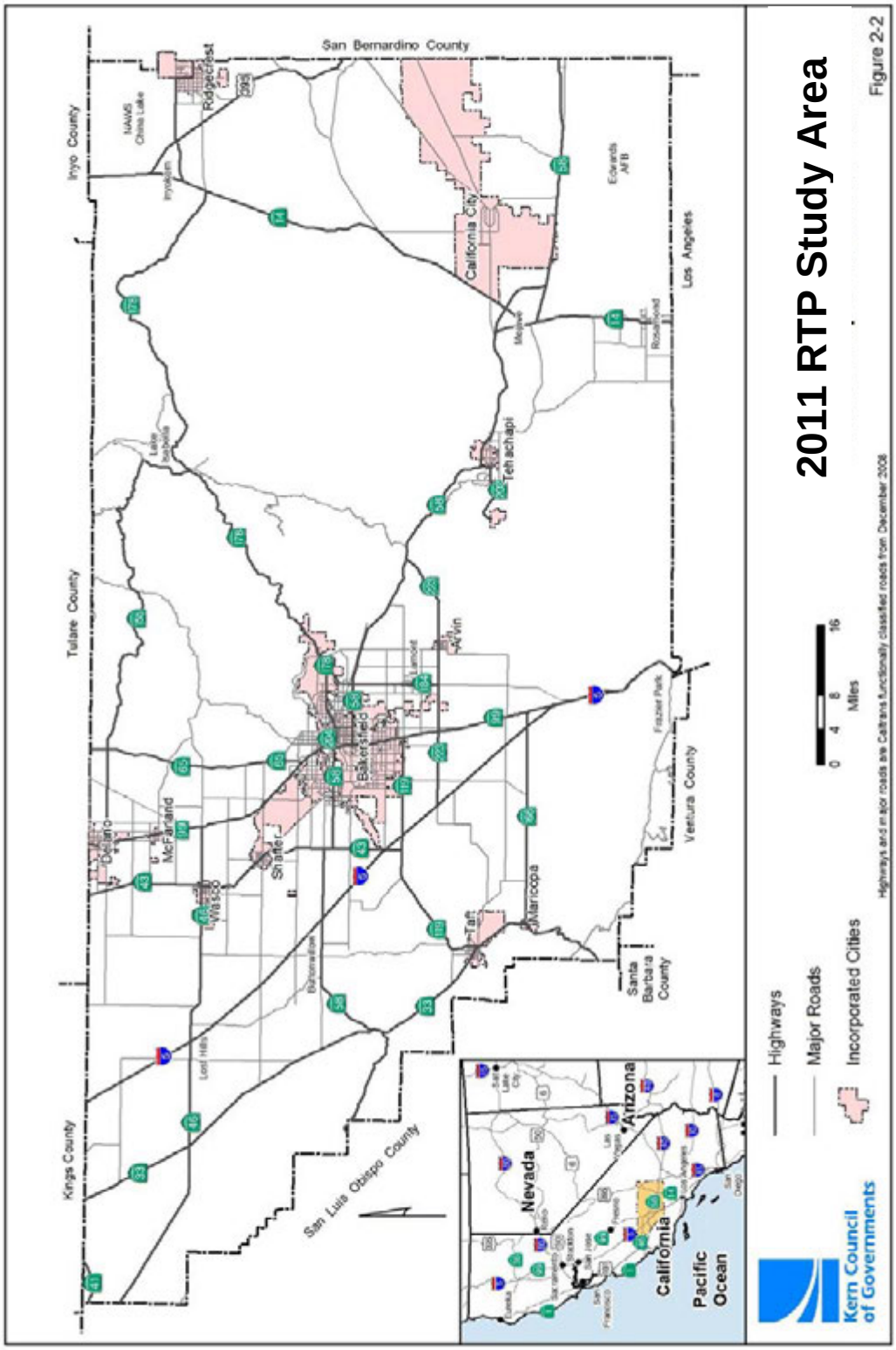
2.4 REGIONAL TRANSPORTATION PLAN PROVISIONS

Regional Streets and Highways Action Element

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

Existing Streets and Highways System

Streets and highways representing the existing system are both the state and interstate highways in the County and the principal arterials important to the movement of people and goods. These projects are federally funded and/or considered "regionally significant". Interstate highways in Kern County relevant to the 2011 RTP Plan include I-5 and US Highway 395. Also relevant are State Routes 14 (Midland Trail and Antelope Valley Freeway) 33 (Westside Highway), 43 (Central Valley Highway), 46 (Famoso Highway), 58 (Rosedale Highway/Mojave Freeway), 65 (Porterville Highway), 99 (Golden State Highway), 119 (Taft Highway), 155 (Delano Woody Highway), 166 (Maricopa Highway), 178 (Crosstown Freeway/Kern River Canyon Road /Isabella Walker Pass/Inyokern Road), 184 (Weedpatch Highway/James Throne Memorial Highway), 202 (Cummings Valley Road), 204 (Golden State Avenue/Union Avenue), and 223 (Bear Mountain Boulevard). Figure 2-2 illustrates the streets and highways system. It includes interstate and state highway routes as well as some of the major arterials and regionally significant roadways. "Regionally significant" is defined as a facility with an arterial or higher functional classification, and any other facility that serves regional travel needs including local roads (such as access to and from areas outside of the Kern region; to major activity centers in the region; or to transportation terminals) and normally would be included in the travel demand model.


2011 RTP Study Area
Figure 2-2
San Bernardino County
Inyo County
Tulare County
Kings County
San Luis Obispo County
Santa Barbara County
Ventura County
Los Angeles
Kern Council of Governments
Highways
Major Roads
Incorporated Cities
Miles
Nevada
Arizona
California
Pacific Ocean

Deferred Local Maintenance Needs

Maintaining the local transportation infrastructure is of critical importance for the entire region. Deferred maintenance costs are estimated to exceed $359 million over the RTP period, according to *Roads to Ruin: Transportation Funding Options for Kern County*, a report prepared by Kern COG in January 2002. Failure to attend to these deferred needs will result in costly repairs when the facility fails; it is more cost effective to apply preventive maintenance treatments and extend a facility's life than to reconstruct once it has completely failed. Funds to handle the backlog of needs simply have not been available. Funding from the State gas tax has traditionally been used to support the maintenance of these facilities; over time, however, gas tax revenues have failed to keep up with inflation.

Given ongoing concern regarding deferred maintenance, Transportation Planning Policies (Chapter 2 of the RTP) recognizes the need to maintain and upgrade the present system whenever feasible. Also included is a policy to investigate federal, state and local funding opportunities that would maintain the current transportation system and promote future transportation development.

Maintenance of state highways also requires considerable investment. State highway maintenance and safety project expenditures are generally funded as part of the State Highway Operation and Protection Program (SHOPP), which do not require local matching dollars. Caltrans prepares a 10-year SHOPP for the rehabilitation and reconstruction of all state highways and bridges that recognizes the growing inventory of deferred maintenance needs.

Table 2-3 provides a revenue forecast for local, state and federal funding which, includes a specific revenue forecast for the maintenance of state highways in the Kern region. All other funding for local maintenance and transit operations are combined by funding type in the Table. Figure 2-3 provides a general overview of financial resources expected for local road rehabilitation, state highway rehabilitation, and transit operations and maintenance.

Regional Transportation Impact Fees (TIFs)

Kern COG is continuing its studies regarding the possibility of raising the fees levied on new development to maintain the transportation infrastructure. Continued funding shortfalls are highlighting the need to investigate all possible revenue sources. Transportation impact fee (TIF) programs are already in place within Kern County. The Rosamond TIF is $1,461 per new housing unit, while Wasco's is $685. Tehachapi has recently adopted a fee of $4,772 per residential unit. The metropolitan Bakersfield TIF assesses nearly $13,000 on every new housing unit built within the city or unincorporated areas. The metropolitan Bakersfield fee has been raised several times since its inception. A recent revision to the ordinance created a core area with a fee half the normal rate, the intent of which is to encourage infill development.

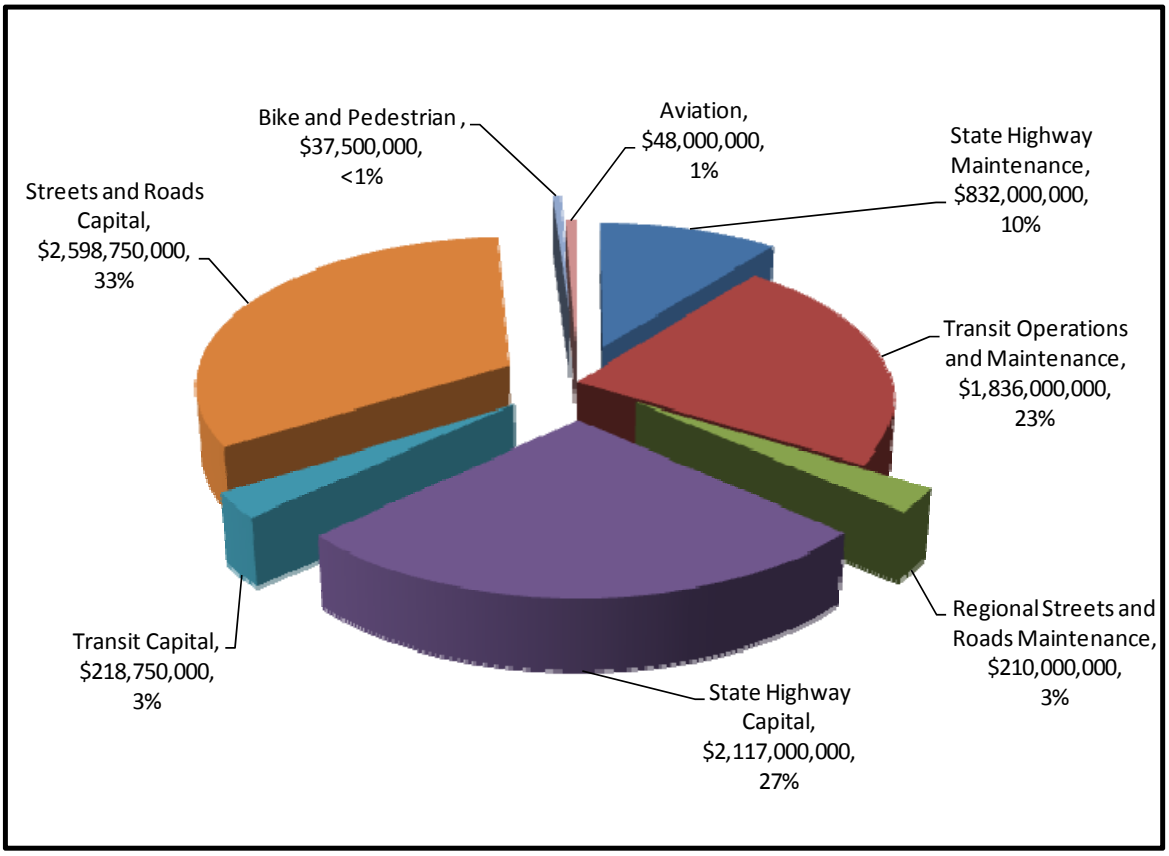
Needs and Issues

Kern COG prepared the Southeast Kern Transportation Impact Fee Nexus Study to assess impacts and benefits of an impact fee for that portion of Kern County. The City of Tehachapi and county areas comprising "Greater Tehachapi" have adopted a fee program resulting from that study. Similar studies will be performed for other sub-regions of the county to establish the relationship between increased travel demand associated with new development and the transportation infrastructure improvements necessary to meet this demand at an acceptable level of service.

TABLE 2-3
Revenue Forecast 2011-2035

Funding Source	Total Revenue	Percent
Local Sources		
Local Transportation Funds	1,205,000,000	15.26%
Bus Farebox	171,000,000	2.17%
Local Agency Funds/Developer Fees/Regional Fees/Other	2,500,000,000	31.65%
Subtotal	**3,876,000,000**	***49.08%***
State Sources		
STIP (Regional and Interregional)	1,397,000,000	17.69%
State Transit Assistance (STA)	460,000,000	5.82%
State Highway Operation and Protection Program (SHOPP)	750,000,000	9.50%
State Aid to Airports	3,000,000	0.04%
Subtotal	**2,610,000,000**	***33.05%***
Federal Sources		
Regional Surface Transportation Program	210,000,000	2.66%
Transportation Enhancement Activities Program	37,500,000	0.47%
Congestion Mitigation and Air Quality Program	197,500,000	2.50%
Local Assistance (HES, HBRR, Sec.130, Emergency Relief)	82,000,000	1.04%
Federal Aid to Airports	45,000,000	0.57%
FTA Section 5307 (Transit – metro)	97,500,000	1.23%
FTA Section 5310 and 5311 (Transit – senior/disabled/rural)	22,500,000	0.28%
State/Federal Demonstration	720,000,000	9.12%
Subtotal	**1,412,000,000**	***17.88%***
Total	**$7,898,000,000**	**100.00%**

FIGURE 2-3
Overview of Financial Resources



Interregional Partnership Planning

Kern COG has embarked on an interregional partnership effort with the regional planning agencies of San Bernardino, Los Angeles, Inyo and Mono Counties. Executive directors and staff from all member agencies meet frequently to discuss transportation and economic development projects of mutual benefit. Of particular interest are multi-modal transportation plans for U.S. Highway 395 and State Routes 14 and 58 corridors, including truck movement studies.

Roads and Streets Monitoring

On an ongoing basis, Kern COG collects data collection and monitors roadway conditions throughout the County for road and street maintenance purposes. This effort includes providing input to the Federal Highway Administration Highway Performance Monitoring System, as well as conducting traffic counts and vehicle occupancy counts at various locations in the County. In addition to highway performance monitoring, Kern COG will undertake an analysis of Pavement Management Systems for each jurisdiction within Kern County as well as a cumulative analysis of pavement conditions and recommendations for addressing funding issues.

Pavement Management Systems are used by incorporated cities to develop better ways to measure serviceability and life cycles, and is used to determine the most appropriate time to rehabilitate pavement, what the most cost-effective method is, and what the cost will be to maintain a roadway system at a desirable condition.

Proposed Capital Improvements

The 2011 RTP includes all of the Metropolitan Bakersfield transportation impact fee (TIF) projects, as well as regionally significant street and roadway improvements identified by other Kern COG member jurisdictions. In addition, state highway projects, coordinated and prioritized locally, are a significant component of the Capital Improvement Program. These highway projects are also coordinated with Caltrans District 6.

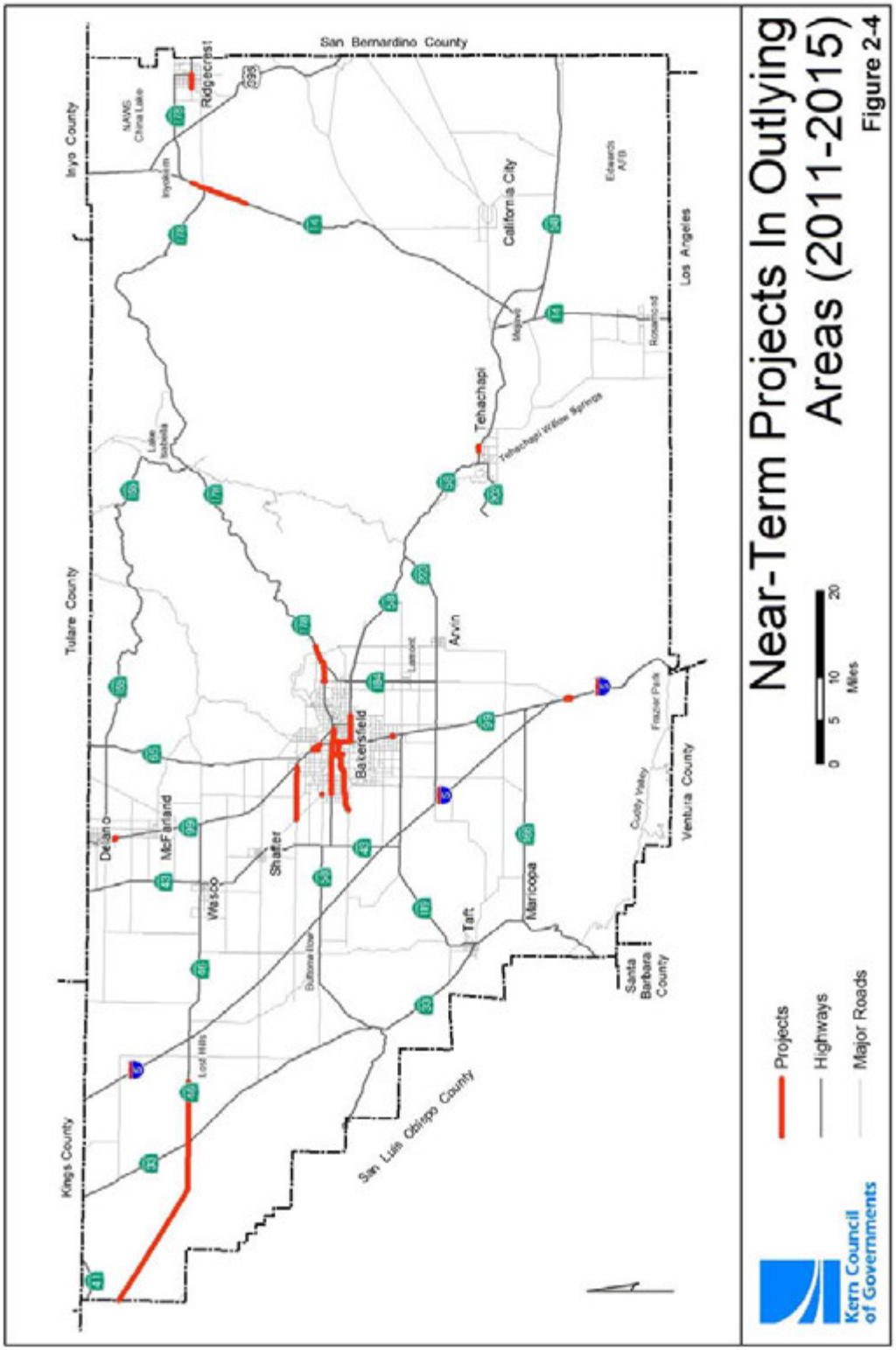
Near Term Actions, 2011-2015 (reference Figures 2-4 and 2-5)

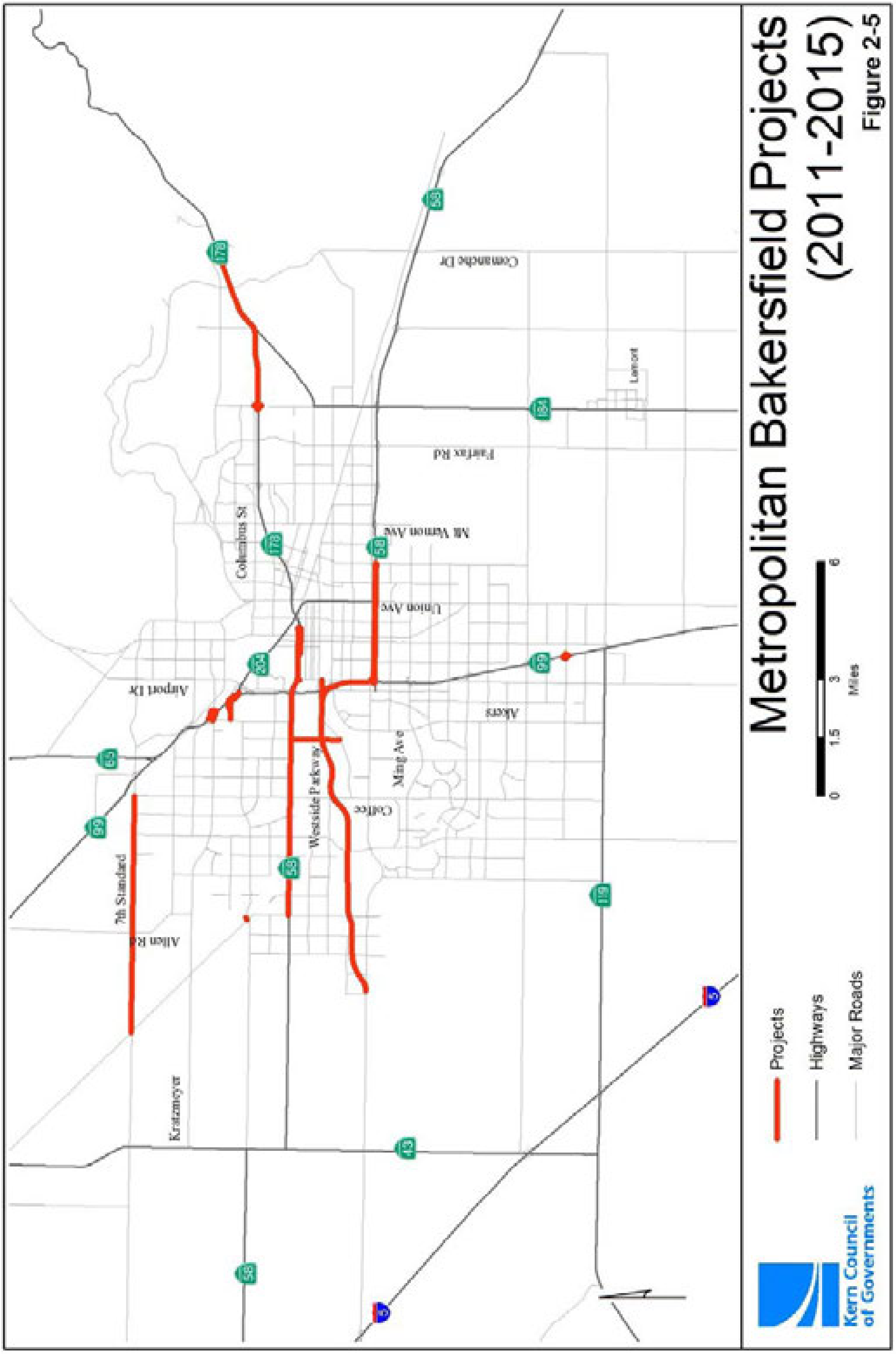
- Work with Caltrans, COG member agencies and other interested parties to prepare environmental studies, right-of-way acquisitions and design engineering work to:
  - Widen Route 46 from San Luis Obispo county line to I-5
  - Widen Route 119 near Taft
- Provide input to neighboring regions' transportation studies and projects for corridors that have significance to the Kern region. In particular:
  - Participate in San Bernardino County's study for the U.S. Hwy 395 corridor
- Maintain Regional Traffic Models to aid in traffic and air quality analyses;
- Prepare a systems-level planning analysis of various transportation system alternatives using multimodal performance measures;
- Pursue a permanent regional funding source via a regional traffic mitigation fee, and/or transportation impact fees by individual communities; and
- Implement the capital improvements for highways, regional roads, and interchanges for this time period.

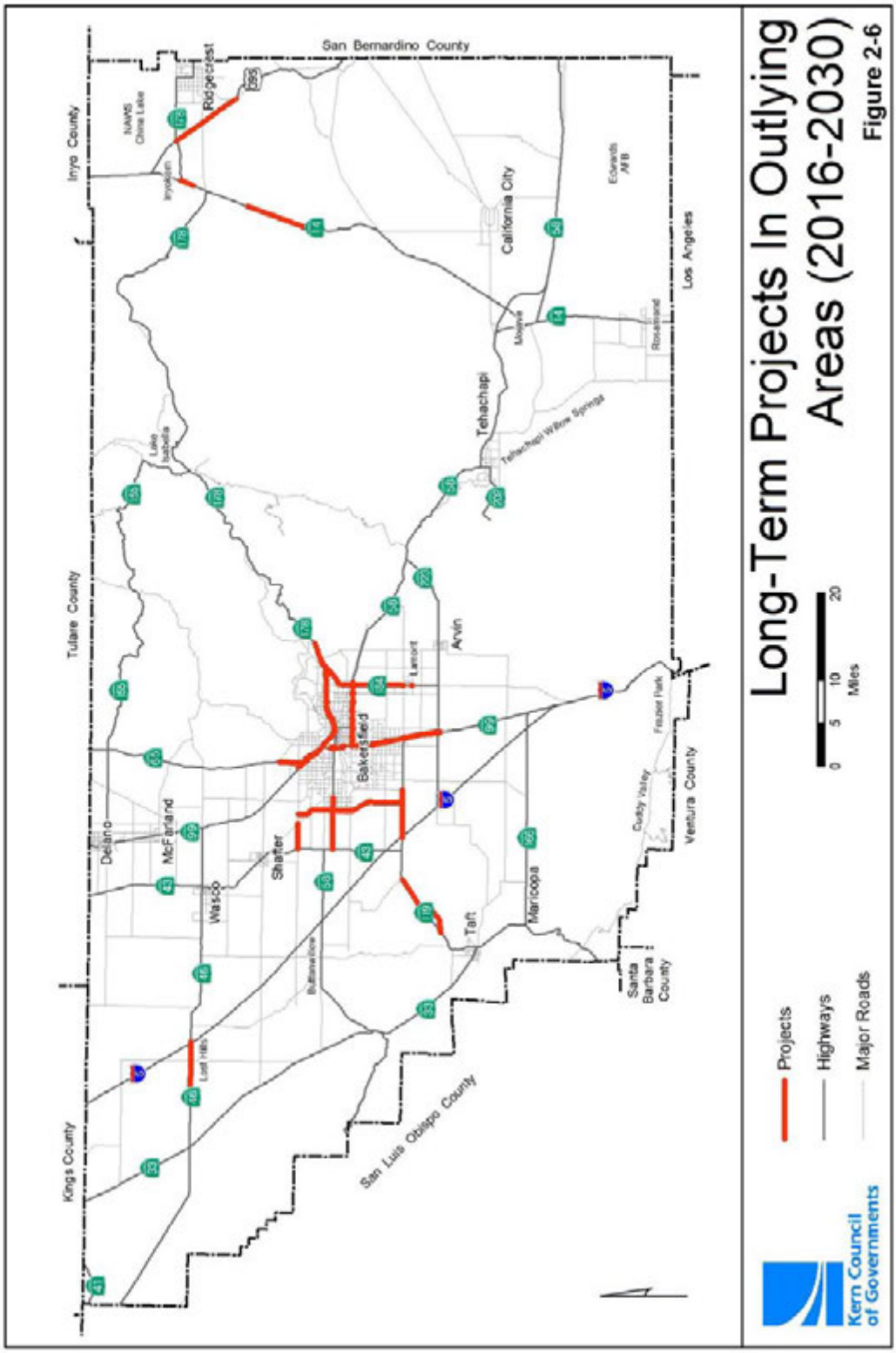
Long Term Actions, 2016-2035 (reference Figures 2-6 and 2-7)

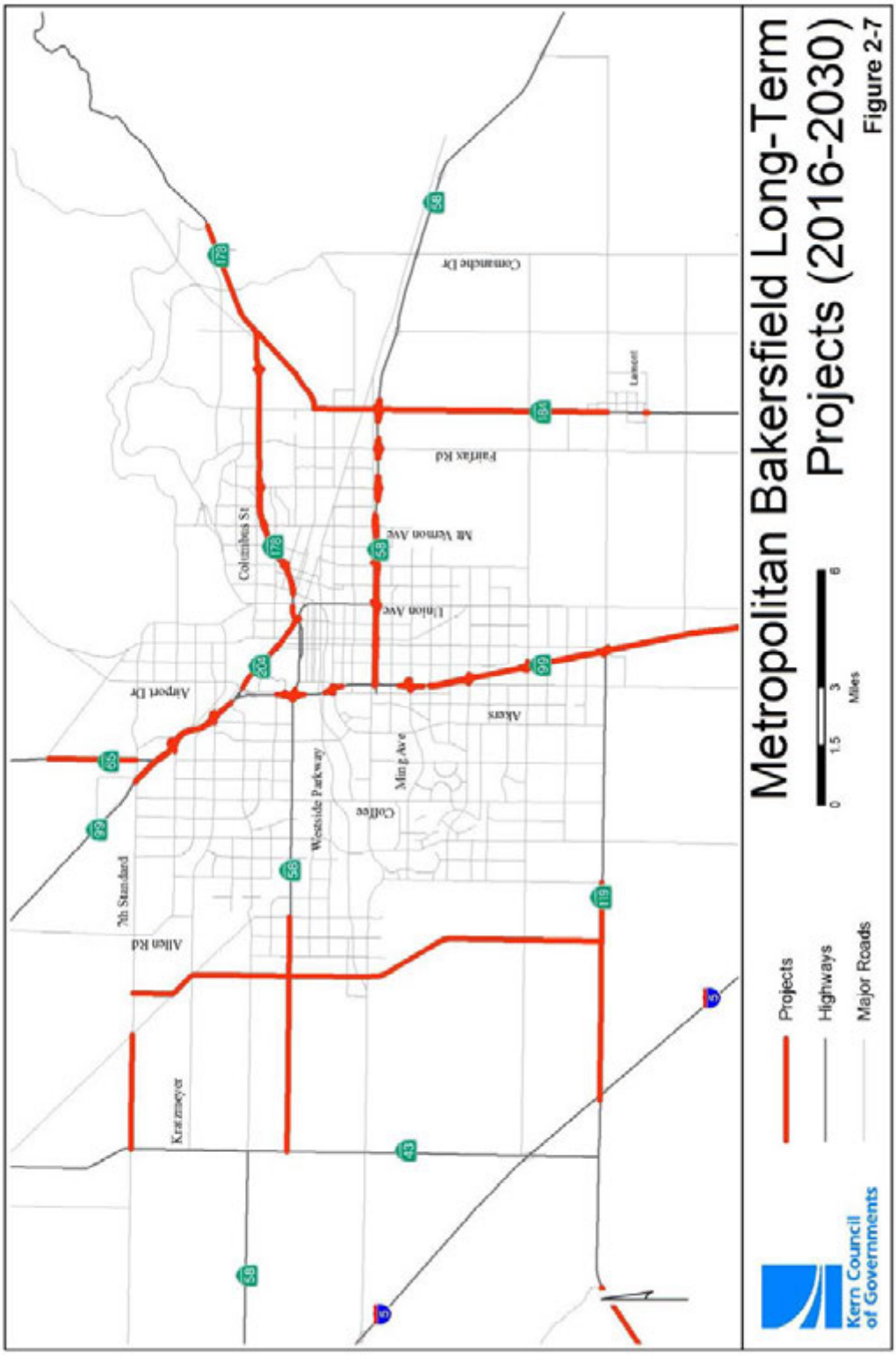
- Maintain existing roadway infrastructure;
- Implement as appropriate and feasible the recommendations of completed transportation and transit studies;
- Pursue and implement the recommendations from earlier studies;
- Prepare studies and/or Project Study Reports for: (1) Routes 99/65/Seventh Standard Road interchange; (2) Route 58 West future alignment; (3) Route 58 West route adoption;
- Implement capital improvements for highways, regional roads, and interchanges for this time period; and
- Review and revise countywide transportation impact fees.

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


Near-Term Projects In Outlying Areas (2011-2015)
Figure 2-4
Projects
Highways
Major Roads
0 5 10 20
Miles
Kern Council of Governments
San Bernardino County
Inyo County
Tulare County
Kings County
San Luis Obispo County
Santa Barbara County
Ventura County
Los Angeles
Ridgecrest
NAWS China Lake
Inyokern
California City
Edwards AFB
Mojave
Rosamond
Tehachapi
Tehachapi Willow Springs
Lake Isabella
Arvin
Lamont
Bakersfield
Frazier Park
Cuddy Valley
Delano
McFarland
Wasco
Shafter
Taft
Maricopa
Buttonwillow
Lost Hills


Metropolitan Bakersfield Projects
(2011-2015)
Figure 2-5
Projects
Highways
Major Roads
Kern Council of Governments
0
1.5
3
6
Miles
Comanche Dr
Lamont
Fairfax Rd
Columbus St
Mt Vernon Ave
Union Ave
Airport Dr
Ming Ave
Westside Parkway
Coffee
7th Standard
Allen Rd
Kratzmeyer


Long-Term Projects In Outlying Areas (2016-2030)
Figure 2-6
Projects
Highways
Major Roads
Kern Council of Governments
San Bernardino County
Inyo County
Tulare County
Kings County
San Luis Obispo County
Santa Barbara County
Ventura County
Los Angeles
Ridgecrest
California City
Edwards AFB
Tehachapi
Arvin
Lamont
Bakersfield
Delano
McFarland
Wasco
Shafter
Taft
Maricopa
Buttonwillow
Lost Hills
Lake Isabella
Frazier Park
Cuddy Valley
0 5 10 20
Miles


Metropolitan Bakersfield Long-Term Projects (2016-2030)
Figure 2-7
Projects
Highways
Major Roads
0
1.5
3
6
Miles
Kern Council of Governments
Camanche Dr
Fairfax Rd
Mt Vernon Ave
Union Ave
Columbus St
Airport Dr
Akers
Ming Ave
College
Westside Parkway
7th Standard
Allen Rd
Kramer

Public Transportation Action Element

Transit Needs and Issues

Limited Transit Dollars

Financial resources for public transportation are limited while demand for those resources continues to increase. Traditional public transportation revenue sources do not support the increasing need for public mass transportation to help mitigate population increases, clean air mandates, and trip reduction programs. The expansion of public transportation services in Kern County is predicated on an aggressive financial plan. The Golden Empire Transit District's (GET) budgets have increased annually as the system responds to increasing consumer demand for transit, in part caused by recessive economic times and shrinking disposable dollars. The financial core to subsidize public transit service is the Transportation Development Act (TDA) Local Transportation Fund (LTF). Funds for the LTF are derived from that portion of the local sales and use tax attributed to the County, or one quarter of 1% of the 8.25% sales and use tax rate. Kern Council of Governments (Kern COG) apportions these taxes to public transit throughout Kern County. In addition, the TDA authorized the State legislature to budget for State Transit Assistance (STA) funding, by means of allocating a portion of the sales and use tax on gasoline.

However, in an attempt to balance the State's financial problems, the Governor suspended the State Transit Improvement Fund for five years. This action began in 2008-09 and will continue, unless alternate financial means become available. Lost funding reduces the opportunity to increase transit service or to acquire more buses. The action clearly demonstrates transit's role in relation to all state-funded activities.

Currently, no local dedicated funding source is available for public transit. A one-half cent countywide sales tax ballot issue for highway as well as transit improvements failed in November 2006. Given the desire on the part of many policy makers and residents for public transit to play a meaningful role in improving air quality, promoting mobility among transit dependant populations, and supporting economic development in the community, the need to secure a dedicated and increasing source of funding becomes imperative.

Short-Range Transportation Development Plans (TDPs)

Transportation Development Plans for Kern transit agencies are usually updated every five years and are used as planning tools focusing on short-term transit needs and improvements. TDPs provide recommendations for improving existing service, identify the transit agencies' roles and responsibilities for better coordination of transit services, and identify possible future transit expansion or revision.

A five-year Transportation Development Plan was prepared for the City of Delano's transit services in early 2005 to respond to its population boom that will likely reach 50,000 within the scope of this Plan. Two key recommendations were that the City retain a full-time Transit Supervisor and that a bilingual marketing program be developed.

In early 2006, a Transportation Development Plan was prepared for the Frazier Park / Bakersfield corridor that looked at future service changes and improvements, concentrating on public transit services provided by Kern Regional Transit. Of particular concern was whether residential development on Tejon Ranch, both at Frazier Park and at Quail Lake in Los Angeles County would trigger the need for additional and expanded service. Also discussed were various recommendations for improved marketing.

As this revision to the Regional Transportation Plan is being written, two more Transportation Development Plans are being prepared. The Ridgecrest short-range plan will specifically evaluate whether changing the current demand-response system to a fixed-route and complementary paratransit system is warranted, as well as assess the

system's connectivity with intercity service provided by Kern Regional Transit and the Carson Ridgecrest Eastern Sierra transit service, co-operated by Kern Regional Transit and Inyo/Mono Transit.

The Western Kern Transportation Development Plan will focus on enhancing mobility for the cities of Shafter, Wasco, and McFarland, as well as to ensure that connections are available to Kern Regional Transit for access between these cities, as well as Delano, Bakersfield, and other places people go for services and employment.

Senior/Mobility-Disabled Public Transportation

The senior and mobility-disabled populations in Kern County have limited access to public transportation. Differing fare structures, trip priorities, and limited service hours inhibit a coordination of efforts among operators of senior and disabled transportation. A countywide Consolidated Transportation Service Agency (CTSA) could be developed to incorporate all public operators of disabled and senior transportation. Expanding the CTSA would provide a means for coordination of services and efforts.

Population Residing More Than ¼ Mile From Transit Route

GET District policy is for 90 percent of residents within metropolitan Bakersfield to be within one-quarter mile of an existing route; however, within the District, several populated areas are more than one-quarter mile from a transit route. Currently, GET serves about 75 percent, or 15 percent less than the District goal. Most of this population is on the periphery of metropolitan Bakersfield, with some areas that form "holes" in the one-quarter mile buffer around the routes. While some of the unserved areas may not have high transit potential, portions of the southwest do have high transit potential, but are currently under-served.

Continued development around the urban fringe presents many difficulties in meeting route coverage standards. Much of the new development is low density; middle and upper income housing that tends to generate little transit ridership. Furthermore, new development is not always contiguous to existing development causing transit services to cover unproductive miles in outlying areas that generate low ridership. However, urban fringe development may generate levels of transit ridership to justify express bus service, such as is offered by GET between Bakersfield College and California State University Bakersfield.

Recent Transit Planning Activities

New Public Transportation Services Plan: In 2005 GET submitted a joint application with Odyssey, a statewide transportation nonprofit organization, for a Caltrans Community-Based Transportation Planning grant to help plan improvements to transit service in Bakersfield. The purpose of this grant was to develop a service plan to provide more innovative and effective public transportation options for serving under-served and hard-to-serve neighborhoods and major destinations within Bakersfield. The primary goal of the project was to engage GET's stakeholders in the planning process and develop plans that improve mobility and increase transportation choices and transit usage given available resources. The study was completed in 2008 and several service improvements recommended in this study have been implemented, including headway improvements and service extensions.

Long Range Plan: The Golden Empire Transit District in partnership with the Kern Council of Governments is initiating a metropolitan Bakersfield Transit System Long Range Plan. The Plan is expected to be completed in 2011. The Plan will provide public agency staff and elected officials with information documenting the relationship between population growth in metropolitan Bakersfield, transit ridership demand, funding, and the evaluation of current operations and efficiencies. The purpose of the Plan is to address emerging intra-city transit system needs. It will also address connectivity between rural areas and major regional transportation facilities such as the Amtrak train station and Bakersfield's airports. The Plan includes public outreach to solicit public input on transit needs.

Eastern Sierra Public Transportation Study

Completed in June 2005, the Eastern Sierra Public Transportation Study focused on public transportation services in Mono, Inyo and eastern Kern Counties. The study represented a comprehensive effort to address short-term interregional transit demands, identify strategies to enhance intra-regional mobility, and present a preliminary feasibility analysis of longer-term passenger rail service between Mammoth Lakes and the Los Angeles region.

The Eastern Sierra study area consists of numerous rural communities, resort towns, and a few urban centers clustered along the Highway 395 corridor in Inyo and Mono counties, and along State Route 14 in Kern County. Given the varied geography, sparse populations and long distances that buses must travel, the study found that transit operations through the Eastern Sierra region provide exceptionally good coverage. Nearly all communities within the study area have some level of transit service, offering basic mobility to meet some travel demands.

Regional Rural Transit Strategy

Kern COG initiated a study to evaluate alternatives to its current network of rural transit services. Nelson\Nygaard consultants, working with Kern COG and a project advisory committee representing transit providers and social services throughout Kern County, inaugurated this effort, the Regional Rural Transit Strategy (RRTS), in Spring 2002.

The first report of the RRTS inventoried existing public transit services in rural Kern County. The second report identifies possible alternatives to existing public transit service and the third report recommends strategies to improve the rural Kern County public transit system. The first report provided the following as areas of focus:

- To identify alternatives that would improve the overall quality of transit service in Kern County;
- To identify alternatives to traditional transit addressing Kern County's regional rural mobility needs;
- To develop coordination alternatives that realize an improvement over the way transit is currently operated;
- To review, identify, and discuss alternative administrative and oversight models for transit services in Kern County;
- To create a strategy for increasing the visibility and importance of transit in Kern County; and
- To create partnerships between transit and non-transit organizations in addressing Kern County's transit needs.

The second report provided a series of alternatives for further consideration.

The final RRTS produced recommendations for alternative methods of countywide public transit service focusing on improving efficiency, effectiveness and cost savings. A cost benefit analysis is necessary to fully assess which recommendations should be given priority.

Amtrak – San Joaquin Service Improvements

Caltrans anticipates that demand will warrant eight round-trips on the San Joaquin Amtrak service by 2010. Start up dates for service are based on projected service needs; demonstrated ridership demand, institutional barriers, availability of operating funding and equipment, availability of capital funding for capacity improvements requested by operating railroads, and technical issues outside Caltrans' control will affect when service improvements can be implemented.

Caltrans' proposed expansion of the San Joaquin Route includes:

- 2010-11 Sacramento – Bakersfield, third train to extend from Stockton to Sacramento (seventh round-trip on route); and

- 2014-15 Oakland – Bakersfield, fifth train to extend from Stockton to Oakland (eighth round-trip on route).

This commitment to the San Joaquin route is well founded by the growth forecast for the Central Valley over the next two decades.

High Speed Rail Authority

Established in 1996, the California High-Speed Rail Authority is charged with the planning, designing, constructing and operating a state-of-the-art high speed train system. The proposed system stretches from San Francisco, Oakland and Sacramento in the north -- with service to the Central Valley -- to Los Angeles and San Diego in the south. With bullet trains operating at speeds up to 220 mph, the express travel time from downtown San Francisco to Los Angeles would be just under 2 ½ hours. Intercity travelers (trips between metropolitan regions) along with longer-distance commuters would enjoy the benefits of a system designed to connect with existing rail, air and highway systems.

The recommended high speed rail network would be approximately 676 miles long, and would serve over 90 percent of the state's population. The system would be completely grade-separated, double-tracked and electrified, with most speeds exceeding 200 mph.

The major challenge to the Authority is to secure financing in order to implement the system. Detailed financial projections show that farebox and other revenue will not be sufficient to finance the construction costs of a high-speed rail system. A voter-approved public funding source (such as a statewide bond measure) will be needed to provide a stable source for construction. While the Authority's 2006-07 budget provides $14.3 million to begin project implementation, voters still must authorize bond funding for the project and AB 713's enactment has delayed the $10 billion bond measure to November 2008.

Proposed Actions

Near-Term, 2011-2015

- Assist local transit agencies in marketing their services;
- Prepare a countywide transit marketing brochure;
- Update the Transportation Resource Directory in consortium with CTSA;
- Update the Social Services Transportation Action Plan;
- Replace full- and mid-size diesel buses with alternative fuel buses within both metropolitan Bakersfield and rural communities, as funding becomes available;
- Construct transfer stations, as identified in Table 2-2; and
- Determine appropriate locations for park-and-ride lots; construct as funding becomes available.

Long-Term, 2016-2035

- Replace all full- and mid-size diesel buses with alternative fuel within both metropolitan Bakersfield and rural communities, as funding becomes available;
- Construct transfer stations, as identified in Table 2-2; and
- Determine appropriate locations for park-and-ride lots; construct as funding becomes available.

Aviation Action Element

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

Existing Aviation System

Kern County's regional airport system includes a diverse range of aviation facilities. It is comprised of seven airports operated by the Kern County Department of Airports, four municipally owned airports, three airport districts, two privately owned public-use airports, and two military facilities.

Scheduled air carrier and commuter airline service is provided at Meadows Field, which serves metropolitan Bakersfield and surrounding communities. Scheduled commuter services are also provided at Inyokern Airport, which serves communities in the Mojave Desert and eastern Sierra regions.

General aviation needs are served by public use airports, both publicly and privately owned, throughout the County. These serve the full range of business, agriculture, recreation, and personal aviation activities.

Characteristics of Kern County's public access airports vary significantly, from size and number of operations to their types of activities and to their expected growth and impact on their local economies. As a group, the airports combine a range of services designed to meet the passenger, business, agricultural, recreational and emergency service needs for the region.

Needs and Issues

Demand

In general, demand for aviation services appears to be met within Kern County. Most of the capital improvement projects for Kern County airports focus on maintenance of existing runways and taxiways with an occasional need to improve navigational aids. However, Kern County Airports' staff is working toward qualifying Meadows Field as a reliever airport for Los Angeles International Airport.

Given aviation forecasts for Los Angeles International Airport, at some time over the next twenty years air traffic for the region may reach saturation. Shafter Airport, Delano Municipal, and Bakersfield Municipal have all recently invested in above ground automated fueling systems to reduce staff cost and improve fueling service hours to local and non-based pilots. Over the next 5 to 10 years, Kern County airports along with airports across the nation, may be investing in navigational equipment designed to allow instrument approaches using global positioning system technology.

Airport Ground Access/Intermodal Connectivity

Regional passenger air service and its intermodal connectivity to ground transportation systems is a key federal transportation planning goal. Just as land use should be designed to take maximum advantage of the existing transportation infrastructure capacity, the transportation infrastructure should be also designed to maximize access to key intermodal passenger hubs such as regional airports, transit and rail. Existing transportation infrastructure includes two regional airports with passenger service in Kern County. Meadows Field is the primary regional facility

for metropolitan Bakersfield and the southern San Joaquin Valley. Inyokern Airport services the Ridgecrest/Indian Wells Valley in northeast Kern.

The new terminal at Meadows Field provides good access to State Route 99 via Seventh Standard Road, and improvements to this access route are scheduled in the 2011 Federal Transportation Improvement Program. The potential for Meadows Field to serve as an overflow facility for Southern California's air traffic may create the need for improvements to ground access. Improvements to Airport Drive, Snow Road, Seventh Standard Road and Route 65 near the airport may be necessary. Better connectivity with the existing Amtrak station in downtown Bakersfield and the potential for high speed rail to connect San Francisco with Los Angeles could result in the need for a transit shuttle, bus rapid transit, light rail, or spur connection between downtown Bakersfield and the airport.

Ground access to Inyokern Airport is adequate for the foreseeable future. The potential for air taxi service to smaller airports could increase traffic at these facilities. Corporate jets are increasingly using the Internet to pick-up additional travelers headed in the same direction and provide a supplemental funding source for their operation. This capability to book a small aircraft while in flight has transportation planners speculating that a whole industry of air taxi providers using satellite Global Positioning System (GPS) navigation could provide point to point service, maximizing the use of small airports. If this were to occur, an increased demand for vehicle/transit/rail access to existing smaller airports may result. Efforts must be made to preserve and maintain access to all civilian airports in the region and expand that access as needed.

Airport Land Use

Over the past decade, former agricultural areas in Kern County have been developed for residential, commercial or industrial use. Since many of the region's public access airports are in agricultural areas or in the urban fringe, much of the new growth is moving closer to the airports. Assuring that the areas around Kern County's airports are devoted to compatible uses has become a more challenging task in this environment of growth pressures.

Noise issues are generally a function of urban encroachment in the vicinity of an airport. In Kern County, virtually all airports were originally developed in areas that were some distance from other development. Frequently, the very success of the airport served as the catalyst for adjacent development. Since the purpose of an airport is to facilitate the take-off and landing of aircraft, and since aircraft make noise, conflicts over noise are an early indicator that an airport is facing the broader issue of urban encroachment.

Noise contours maps have been prepared through various programs for all of the airports in Kern County, using the FAA Integrated Noise Model. For the more active airports, the noise analysis has been part of preparing an Airport Master Plan. Noise contours were also prepared for airports as part of various ALUC studies. A Comprehensive Land Use Plan has been prepared that includes land use analysis, noise contours, airspace plans and layout plans for all Kern County airports.

Recent Aviation Planning Activities

Kern County Department of Airports opened the new Meadows Field William M. Thomas Air Terminal northeast of the former terminal in February 2006. The building has been designed to be expandable to meet future air service demands. The building currently accommodates up to six jet-boarding gates and can be expanded to add six additional bridges. The terminal also has been designed to allow another wing to be constructed that would accommodate an additional 12 jet-boarding gates. Ground area to accommodate additional parking facilities has been reserved.

The Department of Airports anticipates the following activities over the near-term:

- Complete renovations to the Customs and Borders office (former terminal);
- Continue marketing Meadows Field for international air cargo service;
- Upgrade the lights and signs for Runway 30R; and
- Initiated environmental review and project approvals for the Meadows Field, Wasco, Lost Hills and Kern County Airport Master Plans.

In June 2004, East Kern Airport District/Mojave Airport became the first civilian airport to be certified as an inland spaceport by the Federal Aviation Administration. Later the same year, aircraft manufacturer Scaled Composite launched their first sub-orbital aircraft from Mojave Airport, ushering in the age of privately-owned manned space programs.

Homeland Security

Following the events of September 11, 2001, the Department of Homeland Security made airport security a top funding priority. Meadows Field and Inyokern airport have constructed security fences and staffed security checkpoints to improve passenger-boarding security and reduce threats of terrorism. It is imperative that Kern County's public access airports meet all Homeland Security directives.

Proposed Actions

Near-Term 2011-2015

- Work with Meadows Field and Inyokern Airport to obtain funding from the state and federal governments for their respective development programs;
- Work with local and regional transit providers to increase alternative mode ground access options at Meadows Field;
- Assist Meadows Field with planning related to high-speed rail; and
- Work with public airports to increase their access to state and federal funds.

Long Term, 2016-2035

- Continue to work with the public access airports to increase their access to state and federal funds;
- Implement the Action Plan of the Central California Aviation System Plan; and
- Master Plan updates for other airports within Kern County.

Freight Movement Action Element

Efficient freight transportation is critical to the economic health of the Kern region. As one of the prime agricultural regions in the nation, the intra-county road linkage of goods to processing plants, and the inter-county linkage of goods to other regions, manufacturers, and shipping ports are essential. Not only is Kern County a leading agricultural producer, it is also a prominent producer of oil and other minerals. These industries rely heavily on bulk movement by truck, rail and pipeline.

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

Existing System

Trucks

Trucking is the most commonly used mode for transporting freight; its popularity stems from its flexibility, timely delivery and efficiency for haul distances up to 600 miles. Trucking, however, can be more expensive than rail for longer hauls because of its higher energy costs. In addition, trucking is a major cause of street- and highway-surface failures, necessitating a high level of road maintenance.

Heavy trucks contribute to roadway deterioration much faster than do automobiles; however, deferred maintenance and water intrusion in the roadbed continue to be additional causes of road damage. As a result, Kern County streets and highways are subject to rapid deterioration and failure. According to the American Association of Highway Officials, a fully loaded 80,000-pound truck has an impact on roads equal to the passage of approximately 9,000 cars.

Trucking is the dominant mode of freight transport, accounting for 87 percent of outbound tonnage and 81 percent of inbound tonnage (*San Joaquin Valley Goods Movement Study*, September 2000). Commodity movements by truck also indicate a strong relationship with the rest of the state with shipments to/from southern California and the Bay Area, constituting the greatest percentage of total tonnage to and from the San Joaquin Valley (18 and 14 percent of the total, respectively).

To respond to the fastest growing segment of California's economy, the California Legislature approved SCR 96 in April 2000 to create a Global Gateways Development Program, with Caltrans as the lead. The purpose of this program is to identify and implement transportation infrastructure improvements to facilitate international trade and goods movement. These improvements will enhance overall mobility and increase access at and through international ports of entry, international airports, seaports, other major Intermodal transfer facilities and distribution centers, as well as trade corridors within the state.

Major interregional highway corridors handle relatively high volumes of heavy (3- to 5- axle) truck traffic, usually between 16-24 percent of the annual average daily traffic (AADT). By their very size and slower speed, trucks lead to congestion and reduced levels-of-service on rural highways and local streets. In addition, emissions from trucks, like automobiles and trains, have an adverse affect on air quality. While current legislation focuses on implementing Transportation Control Measures for passenger vehicles, TCMs do not specifically address trucking.

While the San Joaquin Valley's major trucking corridors (Interstate 5 and State Route 99) run north/south, other state highways, such as Routes 46 and 58, play key distribution roles as well. As Kern County expands its population and employment base, the need for direct, high-capacity east/west truck corridors becomes increasingly crucial. Special attention must be given to the interregional routes to ensure that they remain in serviceable condition and that major reconstruction costs are minimized.

Cooperative efforts are needed between the trucking industry, the driving public and local officials to assess the impacts that trucks have on local streets, and to create regulatory guidelines for trucks in urban areas. Alternative transportation modes for long-haul goods movement are being explored and supported. These include improved Intermodal freight transfer facilities and access at major airports and rail terminals.

In 2000, the counties of the San Joaquin Valley, in conjunction with Caltrans, hired Cambridge Systematics consultants to conduct the *San Joaquin Valley Goods Movement Study*. This study found that trucking is the dominant mode for moving freight, while rail accounted for 11% of the total tonnage. Rail was also found to be important for long-haul shipments of certain key commodities. Less than 25% of shippers surveyed currently use rails services and only one-third of those indicated that their rail usage was likely to grow. The decline in rail

shipments since 1993 may have been attributable to rail network mergers and acquisitions. Many rail shippers looked for alternative shipping options during this time and had difficulty locating sufficient boxcars to meet their needs. The study also noted a transition with higher-value shipments to alternative modes that provided greater reliability and faster transit times than rail. Food processors in the San Joaquin Valley continue to show strong interest in rail as a preferred shipping mode, and both Union Pacific and Burlington Northern Santa Fe are taking steps to maintain market share in the Valley. For the future, it is expected that rail shipment volumes in the Valley will increase, although market share may continue to decline as demand for shorter-haul service increases and the quality of rail intermodal facilities improves.

Rail

Trains provide an economical means of transporting bulk goods. Although these engines demand heavy fuel consumption, their ability to haul large amounts of cargo makes for an overall low energy requirement per unit of weight when compared to truck or air transport.

Two major rail companies, Union Pacific (UP) and Burlington Northern Santa Fe (BNSF), serve Kern County. UP representatives report that they operate an average of 19 trains per day through the San Joaquin Valley carrying food products, general freight, grain, and lumber (*San Joaquin Valley Goods Movement Study*, 2000). UP and CSX Transportation have teamed to offer perishable goods service, and Express Lane offers refrigerated service from the San Joaquin Valley to New York and Boston.

The San Joaquin Valley Railroad operates a regional freight service between Tulare, Fresno, and Kern Counties on leased Union Pacific branch lines connecting outlying areas to mainline carriers, moving freight primarily comprised of agricultural products, throughout the Valley.

Most cargoes shipped by rail are bulk items such as grains, food products, vehicles, and fuels. Rail transport provides the option of specialized rail cars such as flatbeds, refrigerated boxcars, fuel tankers, and piggyback cars. These specialized rail cars allow transport to move a large variety of goods, giving rail an advantage over other transportation modes for distances over 500 miles. Transport by rail is generally less expensive for long hauls than air or truck transport; however, rail is limited by speed and by fixed rail track. A major example of rail limitation is the route over Tehachapi Summit. Part of the route is single track, and although tunnels have been modified to allow double-stacked containers to pass through, traffic in the opposite direction is often diverted to sidings, creating a congested bottleneck. An estimated 65 trains pass through the Summit daily, with a forecasted increase of up to 100 trains per day over the next five years.

Greater coordination and integration of the various freight transportation modes is becoming increasingly important. Limited resources and intense pressure on existing transportation systems have brought broad-based support for intermodal transportation systems. Kern COG promotes public/private cooperation between modes to increase goods movement efficiency while maintaining a reasonable highway level of service.

Rail Intermodal Facilities

Intermodal terminals are critical to the success of intermodal services. Terminals are the starting and ending points for trains, as well as the sites of crucial distribution between modes. Terminals also function as equipment storage, maintenance and dispatching centers, and as focal points for the flow of information. Terminals vary widely in configuration, capacity, and operations, and only a few have been built from the ground up as intermodal facilities.

In the 1980s, railroads consolidated their intermodal service networks into fewer, larger hubs. Railroads saw an opportunity to consolidate facilities with mergers, and a need to consolidate sufficient volume in one location to justify lift machines. The recent rapid growth of intermodal traffic, the enormous influx of double-stacked container trains,

and the current entry and rapid growth of rail/truck trailer initiatives all raise questions about the adequacy of intermodal terminals to handle rail traffic increases efficiently and effectively.

Union Pacific Railroad has intermodal facilities in Fresno and Lathrop. Intermodal facilities for Burlington Northern Santa Fe are located in Bakersfield, Fresno, Modesto and Stockton. Construction of the new Mariposa yard in Stockton by BNSF is one example of direct investment by Class 1 carriers aimed at meeting growing demand for intermodal service. Increased intermodal service will create potential for local truck congestion problems and access to intermodal facilities could become a critical issue.

Air Freight Service

Air freight service is characterized by the fast shipment of small items of high value over long distances for high cost. Goods movement by air is an emerging element of freight activity in the San Joaquin Valley. Statewide, 23 out of 43 commercial air carrier airports account for almost 3 million tons of freight transported by air. While air freight is a specialized transportation mode, it accounts for an estimated 60 percent of the export values in California. Air carriers depend heavily on truck transportation to deliver goods for transport. A significant feature of air shipment is its dependability and very short in-transit time. Air freight has not played a large role in the Kern area, but with Meadows Field's expansion and the continued growth of the Los Angeles basin, it is feasible that air freight carriers would consider Kern a favorable alternative location.

Inland Port

An inland port would serve as a cargo facilitation center, where a number of import, export, manufacturing, packing, warehousing, forwarding, customs, and other activities (such as Foreign Trade Zone and/or Enterprise Zone) could take place in close proximity or at the same site. This facility could function as an inland sorting and depository center for ocean containers transported to the inland port via truck or rail. Further study will be required to fully analyze the functions and parameters of an inland port.

The City of Shafter has proposed a commerce facility at its International Trade and Transportation Center to foster inland port status. The facility's first phase would include a container hub allowing distributors to drop empty trailers at the site that other drivers can pick up. This has the potential of eliminating a large number of truck trips over the Grapevine and through the Los Angeles basin. The plan would benefit regional air quality in addition to creating jobs.

Pipelines

Various pipelines carry natural gas, crude oil and other petroleum products throughout Kern County. Storage, pumping and branch lines are used to distribute those products. Pacific Gas and Electric is responsible for the maintenance and operation of the natural gas line, while major petroleum corporations are responsible for the crude oil pipelines throughout the region.

Hazardous Material Movement

Because more than 50 percent of all goods transported throughout the world are hazardous to some degree, human life and property is potentially endangered. Each year, more than 4 billion tons of hazardous products and waste are transported throughout the United States. Hazardous materials are typically transported by rail, small or large trucks, but are also transported by air and pipeline.

Within the Kern region, emphasis is placed on hazardous materials routing and training of emergency personnel in the event of an accidental spill. Interstate transportation of hazardous products and waste through the Kern region on

Interstate 5 and State Route 99 increases the probability of dangerous spills. The County of Kern and the City of Bakersfield maintain Hazardous Material Response Units.

Potentially adverse effects associated with transporting hazardous materials can be partially mitigated by restricting roads available to these shipments. Under California law, transportation of hazardous waste must be carried out via the most direct route over interstate highways whenever possible. Exceptions to this general rule are such occasions when it is necessary to avoid highly congested and densely populated areas.

Kings County, north/northwest of Kern County, is the site of a Class 1 hazardous waste facility. The facility, located at Kettleman Hills, draws trucks carrying hazardous materials from all western states. The presence of these trucks on regionally significant routes increases the probability of dangerous spills.

Needs and Issues

Agriculture and the food processing industry provide a stable base to the economy of Kern County. Population and economic growth pressures have resulted not only in the loss of agricultural land, but also an increase in traffic congestion on the rural roadways that facilitate the "farm to market" goods movement. This congestion affects the safe and timely delivery of fresh produce to market and processing plants.

Farm-related transportation also involves the need to move farming equipment along rural roadways. These roadways are usually single-lane with limited shoulders. Heavy, slow-moving farm equipment along these roads conflict with commuter travel requirements and creates unsafe travel conditions.

The evolving freight movement industry has introduced the concept of "just-in-time delivery," which replaces warehouses with freight haulers. With just-in-time delivery, the efficient and timely movement of freight along highways and railways becomes ever more essential to the regional economy's growth and development.

Proposed Actions

Near Term, 2011-2015

- Develop an annual Freight Movement Symposium for decision-makers;
- Maintain liaison with Southern California Association of Governments and all San Joaquin Valley Councils of Government for efficient coordination of freight movement between regions and counties;
- Construct truck climbing lanes on eastbound Route 58 from General Beale Road to the Bena Road undercrossing;
- In response to proposed freight movement activities at Shafter's International Trade and Transportation Center and Meadows Field, three highway projects are proposed: (1) Seventh Standard Road and Route 99 Interchange; (2) widen Seventh Standard Road from Coffee Road to Route 99; (3) widen Seventh Standard Road to four lanes from Santa Fe Way to Route 99;
- Continue development of Shafter Intermodal Facility for freight transfer activities; and
- Improve Laval Road and I-5 Interchange as part of the Tejon Industrial Park improvements.

Long-Term, 2016-2035

- Widen Weedpatch Highway/James Throne Memorial Highway (Route 184) to four lanes to respond to increasing agricultural trucking activity;
- Widen Wheeler Ridge Road to four lanes as a gap-closure measure to tie I-5 to Route 58 via Route 184;

- Construct new Route 58 freeway through metropolitan Bakersfield from existing Route 58 at Union Avenue to Route 99 near Golden State Avenue (Route 204), continuing west to I-5. This freeway component would relieve some of the congested truck movement; and
- The proposed South Beltway Corridor will also relieve a significant portion of congestion caused by truck traffic.

Bicycle and Pedestrian Action Element

Kern County is especially well suited for bicycle facilities that make a meaningful contribution to the overall transportation system. The climate and terrain of the region is favorable for bicycling, with many clear, dry days and moderate temperatures. For short trips, the bicycle can serve as an alternative to the automobile. Because the bicycle is non-polluting and energy efficient, it is an element in the region's multi-modal transportation system that leads to a more efficient transportation network.

While this section focuses on bicycle travel, it should not been overlooked that walking is also a viable travel mode. Residential developments are often within walking distance of commercial centers; however, design considerations should allow for ready ingress/egress of subdivisions. Mild weather, coupled with safely designed sidewalks and paths, can make walking an enjoyable activity.

Existing Systems

Bicycle facilities generally fall into three distinct categories: Class I, and variations of Class I, bike facilities are the first category. Class I facilities provide a means of safe and reliable transportation for those wishing to cycle or walk to their destinations. Several jurisdictions have variations on Class II facilities, which provide optional striping scenarios to allow on-street parking. The County also has a Class III variation that provides a four foot delineated shoulder and bicycle route signage in rural areas.

Accomplishments Since 2000

Bicycle Facilities Plan

In October 2001, Kern COG adopted the *Kern County Bicycle Facilities Plan*, which provided a compendium of bicycle transportation facilities, both constructed and planned. Its intent is to serve as the guide to developing bicycle facilities in an orderly and timely fashion within the region.

In the transportation planning profession, more emphasis is being placed on "soft" solutions to transportation control and traffic congestion. The trend toward solving traffic issues without resorting to expansion of highway and freeway facilities has been evident over the last decade. Kern County has many notable success stories where more effective management of the existing transportation system has reduced or eliminated the need for costly and disruptive expansions. Providing alternatives to automobile travel is a central tenet for smart growth.

The *Kern County Bicycle Facilities Plan* is incorporated by reference as a part of the 2011 RTP.

Needs and Issues

Maintenance Issues

Maintenance of bicycle facilities has always been an issue for local agencies. Roadway maintenance backlogs in nearly every jurisdiction are increasing annually. As the roadway network expands, maintenance efforts and pavement conditions fall further behind. Commitments for investment into new bicycle facilities cannot guarantee a continuing revenue source for upkeep, particularly for bicycle paths on separate rights-of-way. Rather than

diminishing bicycle improvements, however, new funding sources or ways to deal with maintenance should be pursued. Alternative and innovative measures will be studied in order to update the bike master plan.

Public Support

For a number of reasons, bicycling has not realized its full potential as a transportation mode within the Kern region. Primarily, they are related to: (1) ease of short-distance travel via automobile; (2) lengthy distances between residences and work sites; (3) relatively inexpensive and widely available sources of automobile fuel; (4) lack of shower and/or locker facilities at employment centers; and (5) a general aging of the population that may reduce the number of persons who are inclined to take bicycle trips.

General attitudes toward bicycling also present issues. Many area residents do not view cycling as a real transportation mode. These attitudes can be attributed to factors such as:

- Many urban roads do not provide adequate shoulders, causing some cyclists to ride within the flow of traffic;
- Lack of adequate bicycle facilities, such as lockers or alternative means of securing a bicycle;
- Decentralization of employment centers, residential areas, and retail facilities;
- Lack of knowledge regarding the benefits of bicycling; and
- Heat or other weather-related factors.

Motorists are occasionally unwilling to share the roadways with bicycles, and this may lead to antagonistic situations in the street. Education regarding the transportation system must include cyclists, pedestrians, motorists, and transit passengers.

Current Planning Activities

These activities include implementing the existing *Kern County Bicycle Facilities Plan* and promoting more pedestrian and bike uses throughout the county as an alternative to driving.

Proposed capital bicycle and pedestrian projects for the 2011 RTP are listed in Table 2-2. Specific projects identified include those that have recently received funding commitments as well as those that have been identified by COG-member jurisdictions in their capital improvement plans.

Proposed Actions

Lake Ming Bike Path

The City of Bakersfield is in the process of extending the bike path along Lake Ming. The eastern extension of the bike path will tie the existing trail to the planned Lake Ming Loop. This three-mile section will afford breathtaking views of the Kern River with the Greenhorn Mountains as a backdrop. An added notable feature of this expansion is the construction of a branch of the bike path between Morning Drive and Alfred Harrell Highway. This segment of the bike path will overlay the 54-inch water pipeline carrying Kern River water for delivery to the soon-to-be constructed Northeast Bakersfield water treatment plant.

Kern COG will assist in seeking the necessary funding to implement the bike path's routing through the county.

Near-Term 2011-2015

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

Long Term 2016-2035

- Periodically update the bicycle plan;
- Continue to seek funding for bicycle projects from local, state and federal sources; and
- Continue to seek funding to help maintain existing bikeways.

Transportation Control Measures Action Element

Transportation Control Measures (TCM) have received a high level of attention since the passage of the State and Federal Clean Air Acts and congestion management legislation. As a result, air quality planning areas for the entire San Joaquin Valley, Mojave Desert and Indian Wells Valley (Ridgecrest) have been designated as "non-attainment" for at least one harmful pollutant (reference the latest Air Quality Conformity Findings). According to state and federal Clean Air Acts, the worst non-attainment areas must ensure that "all feasible measures" be implemented to reduce harmful air emissions. A goal of the 2011 RTP focuses on carrying out these requirements to achieve required standards for healthy air.

Existing System

Kern COG's existing TCM activity has focused on four areas:

- Alternative Fuels;
- Traffic Flow Improvements;
- Paving Dirt Roads; and
- Transportation Demand Management.

Kern COG's efforts in these areas, in combination with State and Federal implementation of control measures, have been successful in reducing overall emission levels. These reductions have been realized, in part, by the following TCM accomplishments.

Accomplishments Since 2000

Alternative Fuels

Since 1990, Kern COG has allocated more than $20 million to replace over 120 transit vehicles with alternative fueled vehicles and create a network of alternative fueling stations, resulting in a 1/3rd ton reduction in daily ozone-related emissions. Golden Empire Transit, Kern's largest transit provider, operates a 100-percent compressed natural gas (CNG) fixed route fleet (81 buses). Other alternative fueled transit fleets include Kern Regional Transit and Arvin.

Traffic Flow Improvements

Kern Council of Governments has invested significant resources in signalization of four-way stops, signal synchronization, traffic monitoring and a metropolitan traffic operations center. Significant reductions in vehicle emissions resulting from unnecessary idling and acceleration have been realized.

Paving Dirt Roads

Kern COG's TIP/RTP has funded for dirt-road paving in the Indian Wells Valley Air Basin, an area in nonattainment for particulate matter.

Kern Commuter Connection/Public Employer Outreach

Since the early 1980s, Kern COG has operated the Kern Commuter connection rideshare program and 832-RIDE phone line to promote ridesharing, vanpooling, telecommuting, walking and biking to work. In 2003, Kern COG began and a public and employer educational campaign as part of its commitment to implement and Reasonably Available control Measures (RACM) for the San Joaquin Valley Ozone Attainment Demonstration Plan. The program features an online carpool matching software program that individuals and companies can access to find a rideshare match. A year-round campaign using both television and radio advertising promotes this software. In addition, Rideshare Week held every year in October is heavily promoted throughout the community to encourage biking, walking, telecommuting, transit use, and ridesharing at least one day each week.

Needs and Issues

In response to Vision 2020's activities and to comments provided by the general public at Kern COG's workshops, reducing unhealthy air emissions is a primary goal of the 2011 RTP Plan. Recent polls on issues facing Kern consistently rank air quality as the greatest concern for our region's residents. Reducing the 100 tons of PM-10 and the 300 tons of ozone-related emissions while allowing for continued population growth is a major challenge. Several issues must be weighed:

- Cost effectiveness – Limited funding exists to clean air emissions resulting directly or indirectly from transportation. Maximizing funding is a critical component to successfully achieve air quality goals;
- Alternative-fuel fleets – Between 2007 and 2010, clean diesel fuel standards were implemented. This will reduce the effectiveness of CNG/Alternative fueled fleets from 6-times less polluting to half as polluting. This reduction in effectiveness may reduce the emphasis on funding alternative fuel fleets. However, diesel still has a toxicity component that may warrant continued conversion of fleets, especially school busses; and
- Indirect source emissions from new development – A major long-range challenge in non-attainment areas is controlling offsite (indirect source) emissions generated from housing development in the region. According to the Kern COG Transportation Model, each new house generates an average of 60-70 daily vehicle miles traveled (VMT). As new gasoline-electric hybrids and zero emission hydrogen-fuel-cell vehicles become commonplace, ozone-related emissions from transportation sources may someday be eliminated. However, fugitive dust (PM-10) kicked-up by moving vehicles increases as VMT increases. New housing developments need to fully mitigate their indirect source impact to air quality, especially for PM-10;

Current Activities

The following TCM-related activities are being promoted by Kern COG and its member agencies:

- Alternative-fuels station and fleet are being implemented by Kern Superintendent of Schools;
- GET's alternative fueled transit fleet is replacing the diesel-fueled fleet;

- Commuting alternatives are being promoted by public and employer outreach programs;
- GET, City of Bakersfield and County of Kern are coordinating signal preemption to improve on-time service for existing GET fixed routes; and
- Traffic flow improvements, park & ride lots, public transit, bicycling and walking throughout the Kern region.

Proposed Actions

Proposed actions for transportation control measures can be divided into three areas or policies:

- TCM Coordination - Coordinate with all responsible agencies necessary to implement all feasible measures that control harmful air emissions;
- TCM Implementation - Promote implementation of all feasible, cost effective TCMs to achieve air quality emissions by mandated deadlines; and
- TCM Education - Provide necessary support and education to member agencies on all feasible control measure.

In the San Joaquin Valley, the San Joaquin Valley Air Pollution Control District (SJVAPCD) and the eight Regional Transportation Planning Agencies (RTPAs)/Metropolitan Planning Organizations (MPOs) have jointly prepared TCMs as a part of the air district's State Implementation Plans (SIP) for the pollutants Ozone (O_3) and Particulate Matter smaller than 10 microns in diameter (PM-10). These mutual efforts are the result of a Memorandum Of Understanding signed by all of the agencies to coordinate air quality and transportation planning activities.

TCM Coordination

The following TCM Coordination activities are being undertaken for the Kern region:

- Maintain air quality coordination MOU with the eight San Joaquin Valley MPOs, San Joaquin Valley Air Pollution Control District and Caltrans Districts 6 and 10; and
- Maintain air quality coordination MOU with the Kern County Air Pollution Control District.

TCM Implementation

TCMs generally fall into two categories:

- Transportation Demand Management (TDM) – Activities that will reduce the demand for the fossil-fueled, single-occupancy vehicles as a mode of travel, such as ridesharing/vanpooling, increased parking fees, decreased parking supply, park and ride lots, bus transit, rail transit, and bicycle and pedestrian facilities.

- Transportation System Management (TSM) – Activities that increase the efficiency of the existing transportation system without adding new travel lanes, thus reducing the amount of energy required to make the system function, such as traffic signalization, ramp metering, truck auxiliary lanes on major inclines, intersection turning lanes, railroad grade separations, and replacing four-way stop signs with traffic signals.

TDMs and TSMs also benefit mobility and congestion relief by reducing demand and maintaining system efficiency, thereby delaying the need for capacity increasing highway projects.

The 2011 RTP discusses the air quality requirements facing the Kern region (reference the latest Air Quality Conformity Findings), as well as demand management strategies, including bus and rail services (Transit Action Element), bicycle facilities (Bicycle and Pedestrian Action Element), and grade separation (Freight Movement Action Element).

TCMs being implemented by the 2011 RTP and 2011 Federal Transportation Improvement Program include the following strategies for reducing vehicle related emissions:

- Public transit;
- Alternative-fuel fleets;
- Ridesharing and voluntary employer-based incentives;
- Traffic flow improvements/railroad grade separations;
- Park-and-ride lots;
- Bicycle and pedestrian travel;
- Controlling extended vehicle idling;
- Smart growth and transit/pedestrian oriented development;
- Paving/controlling dust from streets and shoulders;
- PM-10 efficient street sweeping; and
- Pursue funding opportunities for Congestion Mitigation Air Quality Program (CMAQ), AB 2766 Motor Vehicle Emissions reductions Program, and other sources that allow allocations for transportation control measures.

Three control measures are not being implemented through the TIP/RTP: voluntary removal of pre-1980 vehicles and engines, controlling extended vehicle idling, and high-occupancy vehicle (HOV) lanes. Recent environmental mitigations at new truck stops and warehousing operations include electric hook-ups to reduce idling of heavy-duty diesel trucks.

In 1996, Kern COG prepared a study of HOV lanes as a part of the Tier I EIR for the Kern River/Downtown Parkway (Centennial Corridor). The study found that an HOV lane during peak period would only carry 2 vehicles per minute. Future studies should consider HOV lanes that allow single-occupancy zero emission vehicles and an HOV system that might include a beltway system and ramp metering.

TCM Education

The following educational activities are being undertaken in the Kern region:

- Identification of all Reasonably Available Control Measures (RACM) for ozone and all Best Available Control Measures (BACM) for PM-10 by Kern COG's member agencies;
- Special presentations and workshops for member agencies on transportation related control measure strategies for air pollution emissions as new standards, technology and funding opportunities evolve; and
- Media campaigns promoting the various TCMs listed above.

Sustainable Land Use Action Element

Land use is one of the most important factors in effective transportation planning to preserve the region's economic, environmental, and equitable sustainability. While Kern COG does not have jurisdiction over land use planning, the agency promotes and encourages dialogue among stakeholders involved in the land use decision making process, through both environmental process and the Regional Blueprint Visioning process.

Land use affects all transportation modes; however, some transportation facilities are more dependent on land use decisions than others. To rank the importance of land use decisions for transportation-related infrastructure, planners can consider the number of site opportunities to accommodate a particular facility or land use. The more site opportunities, the easier and cheaper it is to find a place to move the facility. This element covers transportation planning priorities from a land use perspective. Each transportation category discussed (global gateways, rail/transit, and highways/roads) focuses on the need to preserve locations for intermodal connectivity and viability, ensuring that RTP goals and Regional Blueprint Vision are met.

Near- and Long-term actions associated with each category are provided below. Further detail regarding each category is provided in Chapter 4 of the 2011 RTP.

Global Gateways Land Use Actions

Near Term, 2011-2015

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

Long Term, 2016-2035

- Monitor progress toward implementing regional principles developed by the Kern Blueprint visioning process;
- Expand the role of the Transportation Technical Advisory Committee or create a new entity for collaboration on building and preserving regional transportation infrastructure for economic opportunities. Add ex-officio member representatives from military and civilian airports and air traffic stakeholders, as appropriate;
- Coordinate with the Kern County Department of Airports to establish intermodal connectivity for rail, trucking, transit and passenger vehicles; and
- Work with Kern Economic Development Corporation to promote logistics and aerospace job opportunities in Kern County.

Rail/Transit Related Land Use Actions

Near Term, 2011-2015

- Use the existing California Environmental Quality Act review process to inform stakeholders, local land use planners and decision makers on the impacts of sensitive land use developments near vital transportation infrastructure necessary to handle increasing local, intercity and interregional transit usage as well as rail freight usage;
- Work with Golden Empire Transit, Kern Regional Transit and local transit providers to preserve the existing and future transit opportunities from the encroachment of low density land uses around transit oriented development centers that could negatively impact transit ridership;
- Implement the long range Blueprint visioning process in partnership with member agencies to preserve near and long range transportation infrastructure to promote the gradual intensification of transit use only when the market demand from compact land uses increase;
- Encourage the adoption of general plans and circulation elements that address transit, bike and walk modes. Consider specific plan lines and form-based codes where appropriate to implement transit improvements along designated transit corridors connecting transit oriented development centers;

- Expand transportation choices and transit usage by providing market driven housing choices that include more compact and mixed land uses within walking distance to transit centers;
- Indentify and space transit oriented, village, town, suburban/community centers a minimum of 1 to 4 miles apart.
- Provide convenient and safe walk and bike paths to a fix transit hub at each development center;
- Allow reduced parking requirements near transit centers that have alternative modes of access such as walk, bike, circulator bus, etc.;
- Coordinate with Golden Empire Transit on implementation of traffic signal green-light extension technology as a first step toward implementation of Bus Rapid Transit and peak period bus/carpool lanes on arterial streets; and
- Coordinate with Golden Empire Transit, Kern Regional Transit and Kern County Department of Airports to improve intermodal connectivity between transit systems and Meadows Field.

Long Term, 2015-2035

- Monitor progress toward implementing principles developed by the Blueprint visioning process;
- Expand the role of the Transportation Technical Advisory Committee or create a new entity for collaboration on building and preserving of the region's transportation infrastructure toward ensuring economic opportunities. Add ex-officio member representatives for land use and transit stakeholders as appropriate; and
- Promote more compact and mixed use centers along major transit corridors to support more intense transit options such as Bus Rapid Transit and light rail.

Proposed Road/Highway Related Land Use Actions

Near Term, 2011-2015

- Use the California Environmental Quality Act review process to inform stakeholders, land use planners and decision makers on the impacts of sensitive land use developments near vital transportation infrastructure necessary to handle increasing road and highway usage and facilitate transit and truck goods movement;
- Work with member agencies to preserve existing and future road and highway rights-of-way from the encroachment of sensitive land uses;
- Implement the long range Blueprint visioning process in partnership with member agencies to preserve near and long range transportation infrastructure to promote the preservation of goods movement routes and facilities;
- Encourage the adoption of regional circulation elements that address good movement, using specific plan lines as appropriate to implement goods movement improvements along designated transit corridors connecting transit oriented development centers; and
- Provide for all types of truck-related goods movement along truck route corridors.

Long Term 2016-2030

- Monitor progress toward implementing regional principles developed by the Blueprint visioning process;
- Expand the role of the Transportation Technical Advisory Committee or create a new entity for collaboration on building and preserving the region's transportation infrastructure toward economic opportunities. Add ex-officio member representatives from trucking stakeholders, as appropriate; and
- Promote land use along freight corridors that are compatible with goods movement traffic.

Land Use Decisions Outside Kern County

Near Term Actions 2011-2015

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

Long Term Actions 2016-2035

- Encourage land uses decisions by local government member agencies that promote pedestrian, bike and transit oriented mixed use and infill development;
- Encourage local government agencies to plan for high density, pedestrian oriented transit hubs that support the current and planned investment in alternative transportation modes such as bus transit;
- Encourage higher densities by member agencies in with the Regional Housing Allocation Plan;
- Promote land uses patterns that support current and future investments in bus transit and may one-day support passenger rail alternatives;
- Re-evaluate feasibility or commuter rail alternatives and intermodal connections after 2014 and in light of potential high-speed rail service;
- Promote increased communication with neighboring jurisdictions on interregional land use issues;
- Coordinate regularly with the SCAG on interregional land use and transportation planning issues;
- Coordinate with the eight San Joaquin Valley Metropolitan Planning Organizations on interregional land use and transportation planning issues;
- Coordinate with the Eastern Sierra Transportation Planning Partnership on interregional land use and transportation planning issues; and
- Continue coordination activities with San Luis Obispo and Santa Barbara COGs on interregional land use and transportation planning issues for State Routes 33, 41, 46, 58 and 166.

Intelligent Transportation Systems Action Element

Introduction

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

The EDP's primary focus for the Kern County region is the maximization of safety, traffic flow, and efficiency in both rural and urban areas. It presents an integrated, multi-modal, phased strategic plan to address the surface transportation needs and problems of the Kern region through the use of ITS. By preparing the EDP, Kern County

will be in a position to take advantage of federal and other funding opportunities and implement various components of ITS.

Kern COG was the lead agency for this study, with key participation from California Department of Transportation (Caltrans) District 6, Caltrans New Technology and Research Program, as well as various cities and transportation agencies within the Kern region. The overall goal of the ITS EDP was to develop a multi-year strategic deployment plan for the Kern region that would result in a well balanced, integrated, intermodal transportation system. Kern's transportation needs that have the potential of being addressed by ITS technologies have been identified and ITS elements that would be beneficial, cost-effective, and can be implemented have been evaluated. The strategic plan facilitates the integration and coordination of ITS applications valley- and state-wide in conjunction with other EDPs conducted throughout California.

Kern EDP Needs and Issues

Poor visibility because of fog and blowing dust, large percentages of truck traffic, high winds in eastern Kern County, steep grades, snow and ice, rockfalls, and red-light violations all contribute to the growing concerns about highway safety. Tule fog, a problem throughout the entire Central Valley region, has caused some of the worst accidents in the state involving dozens of vehicles and closing Interstate 5, the main artery through the valley, for hours at a time. Fog in Kern's mountainous regions causes similar levels of serious incidents along Route 58. Blowing dust, related directly to seasonal agriculture, causes similar difficulties for travelers. In the urban areas, red-light violations are an issue. In eastern Kern County, high winds cause high profile vehicles to overturn. Snow, ice, and rockfalls can make travel unpredictable through the rural areas. This EDP places traveler safety first in determining ITS solutions for Kern.

Additional issues addressed in the EDP include:

- Improved information sharing among agencies;
- Improved traffic progression across jurisdictional boundaries;
- Reduction in delays due to incidents;
- More informed traveler decision making through improved traveler information systems;
- Improved data collection through expanded coverage of information sources;
- Increased transit ridership;
- Enhanced transit coverage and efficiency;
- Improved air quality analysis; and
- Improved commercial vehicle operations.

Kern ITS Programs

Six programs were developed that integrate existing ITS efforts underway in the Kern region and will incrementally develop a sound basis for future expansion of ITS in the region. These programs are:

- Communication Network Development Program – Connects different agencies within the region to allow coordination and cooperation in operating and managing the transportation system. Examples include building communication links with Bakersfield SONET ring and developing smart call boxes;
- Traffic and Incident Management Program – Integrates various state, regional, and local agencies serving Kern into a comprehensive, region-wide approach to traffic and incident management. Examples include census stations, system and/or incident detectors; coordinated incident management procedures; and freeway changeable message signs;

- Kern Traveler Safety Program – Combines applications that address safety, such as weather stations, smart studs; and rock-fall detection systems;
- Kern Informed Traveler Program – Uses advanced warning systems for the reduction of accidents and congestion. Examples include development of advanced traveler information systems; upgrades to Bakersfield's transportation operations center; and interactive commuter kiosks;
- Kern Smart Transit Program – Increases transit's share of the commuting market by providing an alternative mode that is flexible, convenient, and responsive to customer demand. Examples include upgrading Golden Empire Transit service and coordinating Golden Empire Transit and Kern Regional Transit schedules; and
- Enhanced Emergency Response Program – Provides police, sheriff, fire, ambulance, and other service providers with tools that determine quickly and accurately which routes will be most beneficial. Examples include workstations for emergency response providers and establishing emergency corridor routes.

Implementation of these programs will make transportation throughout Kern County safer, more efficient, and noticeably more pleasant for travelers. These programs were developed specifically for the Kern region, but each was developed as a part of an open, expandable plan, in order to provide a starting point for valley-wide integration of ITS. This means that other counties in the Central Valley that have similar problems and needs will benefit from this plan and can combine ITS programs. Regional integration will provide further opportunities for cost sharing and funding that will ultimately result in cost savings to all agencies involved. The broader goal is to facilitate a seamless statewide ITS network.

San Joaquin Valley ITS Plan

Using a federal planning grant, the eight San Joaquin Valley counties formed an ITS committee focused on solving transportation problems within the region. The vision for the San Joaquin Valley ITS Strategic Deployment Plan is to enhance the quality of life, mobility, and environment through coordination, communication, and integration of ITS technology for the Valley's transportation systems. The ITS plan includes major local elements developed by each of the eight counties. The plan coordinates architecture, standards and the institutional issues and also provides a framework for deploying ITS.

The San Joaquin Valley Intelligent Transportation Systems Strategic Deployment Plan was adopted by Kern Council of Governments in November 2001 and is incorporated within the 2011 RTP by reference. The plan was federally approved January 8, 2002.

Short- and Long-Term Actions – 2011-2035

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

San Joaquin Valley ITS Architecture Maintenance Plan

While the San Joaquin Valley Regional ITS Architecture is included in the San Joaquin Valley ITS Strategic Deployment Plan, it is considered a process that will be maintained, revised, and validated as needed. The Architecture is a set of rules that facilitates the building of systems and allows these systems to communicate and inter-operate when built. Changes to the Regional ITS Architecture, such as new ITS regional needs, plans and priorities, projects, scope, and stakeholders, will be documented through updates to the Deployment Plan. The San

Joaquin Valley ITS Architecture Maintenance Plan, including revised management procedures, was adopted by the Kern Council of Governments on April 21, 2005, and is incorporated within the 2011 RTP by reference. The plan was federally accepted July 14, 2005.

Congestion Management Program Element

As with the previous federal surface transportation acts , under SAFETEA-LU (Section)(s) 1107, 6001), all urbanized areas larger than 200,000 population are required to have a Congestion Management System (CMS) , Program, or Process. Kern Council of Governments (Kern COG) has chosen to continue referring to its congestion management activities as a Program. The federal Congestion Management Process requirements are similar to the optional California requirements; in fact, the CMP was largely modeled after the California Program. Both processes are structured around the identification and monitoring of a system, the establishment of performance standards, and the identification and correction of congestion problems. The CMP was developed through a open public process in 1991 under State guidelines. Since 1998, The CMP has been included as a subsection of the Regional Transportation Plan. In 2005 the CMP became federally mandated.

The Final Rule for the Federal Management and Monitoring Systems defines an effective Congestion Management System Process as a systematic process for managing congestion that provides information on: (1) transportation system performance, and (2) alternative strategies for alleviating congestion and enhancing the mobility of persons and goods to levels that meet state and local needs.

Pursuant to California Government Code Section 65089(a), Kern COG was designated as the Congestion Management Agency by the majority of the cities representing the majority of the population and the Kern County Board of Supervisors. Kern COG consists of representatives from the eleven incorporated cities and two representatives from the County of Kern. The Golden Empire Transit District, Joint Planning Policy Board, and Caltrans are *ex-officio* representatives on the Agency Board.

The Congestion Management Agency is responsible for developing, adopting, and updating a Congestion Management Program. The congestion Management Program is updated as part of the Regional Transportation Plan every 4 years. The Program is developed in consultation with, and cooperation of, regional transportation providers, local, state and federal governments, including California Department of Transportation, and both the Kern County and San Joaquin Valley air pollution control districts.

In 2009, the California Resources Agency developed revised language for the California Environmental Quality Act (CEQA) Environmental Checklist Form. The new guidelines expand the definition of traffic congestion to include consideration of impacts to transit, bike and pedestrian modes as well as the consideration of travel demand measure strategies.

Because the Congestion Management Program can be amended and updated as frequently as annually, it can be modified to reflect local conditions in traffic congestion and transportation funding. This document fulfills the statutory requirements for the Congestion Management Program as required under State law and for the Congestion Management Process under federal law.

Purpose

The purpose of the Congestion Management Program is to help ensure that a balanced transportation system is developed that relates population growth, traffic growth and land use decisions to transportation system level of service (LOS) performance standards and air quality improvement. The Program is an effort to more directly link land use, air quality, transportation, and the use of new advanced transportation technologies as an integral and complementary part of this region's plans and programs.

Local jurisdictions are required to:

- Use consistent level of service methodologies, performance standards, and travel forecasting techniques;
- Adopt and implement a land use analysis program, which includes acting as a responsible agency for Traffic Impact studies as part of environmental documentation;
- Participate in annual monitoring activities, maintain acceptable performance levels on the system, or if necessary, designate individual segments or intersections deficient through adoption and submission of a Deficiency Plan to Kern COG. Deficiency plans may be submitted through the environmental review process; and
- Adopt Transportation Demand Management mitigation and monitoring program prior to their Congestion Management Program conformity findings.

Failure of a local jurisdiction to fulfill these responsibilities could engender loss of federal gas tax funding. According to the 2008 Federal Highway Administration Guidebook on the Congestion Management Process, "*no Federal funds may be spent for capacity-expanding projects unless they come from a CMP*" for Transportation Management Agencies greater than 200,000 population and in federal non-attainment areas.

Contents

The Congestion Management Program includes the following six elements:

- Land Use Impact Analysis: An established process where Kern Cog in consultation with its member agencies evaluate the impacts of proposed local land use decisions on Kern County's transportation system, including an estimate of the costs associated with mitigating requirements. This process employs the existing California Environmental Quality Act (CEQA) agency review process;
- Multi-modal Performance Standards: Determines how much traffic, during peak hours, is acceptable on state freeways, highways and major streets within Kern County. These standards do not replace adopted city or county traffic goals, which generally establish more stringent standards. In addition, identifies frequency and routing of bus service, and coordinate transit service provided by separate operators throughout Kern County. Multi-modal performance standards are also referred to as the "complete streets" strategy, and are applied in the Circulation Plan maintained by each jurisdiction;
- Regional Traffic Model: Predict level-of-service exceedances, prioritize the Capital Improvement Program, and analyze the impacts of land use on the Congestion Management Program network. Kern COG maintains the regional traffic model for evaluation of congestion performance measures in the RTP and as a key input to local and regional traffic studies;
- Transportation Demand Management: Describe programs to promote alternatives to driving alone or single occupancy vehicle (SOV) travel. These include such activities as carpools, vanpools, transit, bicycles, park-and-ride lots, freeway service patrols, and intelligent transportation system technologies. These programs will improve air quality in the region and help meet the goals of the Air Quality Attainment Plans, as well as climate change goals. Often environmental documents refer to the Transportation Demand Management (TDMs) strategies as Transportation System Management strategies (TSMs). Kern COG, Caltrans and local governments should incorporate TDMs/TSMs into their Transportation Plans, Circulation Plans, transportation studies, and corridor studies as appropriate;
- Capital Improvement Program (CIP): Establish transportation improvements that can be expected to improve traffic conditions over a minimum of seven years. This program has been developed to make the best use of the funds currently available. The CIP is developed and maintained by the Kern COG with public and member agency input and
- Deficiency Plan: Project leads prepare a plan of remedial actions when a roadway level of service standard is not maintained on the designated Congestion Management roadway system. The plan may be addressed in a stand-alone traffic impact study or as part of the environmental document.

In addition to these components and as a part of the process of developing and monitoring the Program, the local government agencies and Caltrans are required to develop and maintain a traffic data base for use in a countywide model and to monitor the implementation of the Program elements. This data base requirement may be fulfilled through participation in the Kern COG regional traffic count program.

Along with State-level requirements, federal transportation funding legislation requires each state to develop and implement a transportation Congestion Management Process that will be incorporated into the regional planning process, comply with the intent of the federal requirement, and be considered a part of Kern County's Congestion Management Program. The Program identifies areas where congestion occurs or may occur, identify the causes of the congestion, evaluate strategies for managing/mitigating congestion and enhancing mobility, and develop a plan for implementation of the most cost effective strategies. Strategies regarding congestion management include:

- Transportation demand management measures;
- Traffic systems management operations improvements (i.e., signal coordination, freeway service patrol, real-time traffic conditions online, etc);
- Measures to encourage high occupancy vehicle (HOV) use;
- Enhanced mobility measures that provide a congestion relief valve such as transit service in corridors that are not affected by the peak period congestion (i.e. arterial-based peak period transit/HOV lanes or light rail);
- Establishment of multi-modal level of Service (LOS) in local circulation plans, similar to the complete streets concept;
- Congestion pricing;
- Land use management and activity/transit-oriented center strategies;
- Incident management strategies;
- Application of intelligent transportation systems (ITS) technology;
- Addition of general purpose (mixed flow) traffic lanes; and
- Other mitigation that allows for mobility through congested corridors for modes other than single occupancy vehicles, including non-motorized bikes and pedestrian trips.

Advances in telecommunications technology and networks provide an additional opportunity to further mitigate congestion by reducing the need for travel both within the region and between regions. To an extent, these telecommunications advances are occurring within the private sector without public sector initiatives. However, Kern COG is evaluating a potential public sector role (see chapter 4 ITS Action Element).

Monitoring and Implementation Process

To ensure the Congestion Management Program is being implemented, the cities and County provide the Congestion Management Agency considerable information annually, primarily in the form of technical data, as well as policy and planning summaries, including the following:

- Traffic Level of Service - Each city, the County and Caltrans must provide peak hour traffic counts and level of service calculations on their designated streets and intersections. These agencies participate with kern Regional Transportation Modeling Committee, which oversees a regional traffic count program and travel demand forecasting program administered by Kern COG;
- Local Traffic Models - Kern COG is required to approve any traffic models used by the cities and the County to evaluate impacts of proposed land use development on the transportation system. After the model has been initially approved by the Congestion Management Agency, only changes to the model will need to be submitted;
- Land Use Database - Kern COG is required to establish and maintain a uniform land use database for the development and monitoring of the Program. All current and future land use projections must be included in the database. Any changes to the land use database must be submitted to Kern COG;

- Local Capital Improvement Program - The Program includes a minimum seven-year Capital Improvement Program to maintain or improve the level of service on the Congestion Management System Network and transit performance standards, and to mitigate regional transportation impacts identified through the Congestion Management Program's land use analysis element; and
- Performance Monitoring – Kern COG is required to update the Level of Service for the Congestion Management System Network as well as system wide congested travel statistics using the Kern COG regional travel demand model.

Designated Regional Transportation System

The purpose of defining the Congestion Management Program network is to establish a system of roadways that will be monitored in relation to established level-of-service standards. At a minimum, all State highways and principal arterials must be designated as part of the Congestion Management System of Highways and Roadways. Kern County has 18 designated State highways. The roads selected as principal arterials by the Congestion Management Agency serve inter-regional traffic traveling between State highways and also complete gaps in the Congestion Management network.

California Government Code Section 65089(b)(A) requires that the Congestion Management Agency establish a system of highways and roadways that includes all of the State highways and principal arterials. Once a roadway is included in the network, it cannot be removed. All new State highways and principal arterials must be included in the system. If in the future, however, an existing segment of State highway is replaced by a new alignment, the new alignment would be added to the Congestion Management network while the old alignment would be dropped from the network.

A listing of State highways and principal arterials on the designated Congestion Management System is provided below:

Highways

Interstate 5	Route155
Route 14	Route 166
Route 33	Route 178
Route 43	Route 184
Route 46	Route 202
Route 58	Route 204
Route 65	Route 223
Route 99	U.S. 395
Route 119	

Principal Arterials

China Lake Boulevard - Route 178 to Route 395
Rosamond Boulevard - Tehachapi-Willow Springs Road to Route 14
Seventh Standard Road - Route 99 to Route 5
Tehachapi-Willow Springs Road - Route 58 to Rosamond Boulevard
Wheeler Ridge Road - Route 5 to Route 223

Level of Service Standards

The purpose of this section is to establish Level of Service standards for the Congestion Management road network in Kern County. California Government Code Section 65089(b)(1)(B) requires that Level of Service standards be established at no worse than LOS E, or LOS F if that is the current level of service. Level of Service, according to the *Transportation and Traffic Engineering Handbook*, is a "qualitative measure that represents the collective factors of speed, travel time, traffic interruptions, freedom to maneuver, safety, driving comfort and convenience, and operating costs provided by a highway facility under a particular volume condition." Level of Service is ranked from A to F, with A

being best and F being worst. Table 3-17 in Chapter 3 of this SEIR provides a detailed description of LOS A through F.

Jurisdictions are encourage to incorporate multi-modal level of service standards as appropriate for each community facility type, place type and corridor type as recommended in the latest highway capacity manual update,

Adopted Level of Service Standard

One of the most important elements of the congestion management process is to establish traffic Level of Service standards to decide how much traffic, during peak hours, is acceptable. LOS is a way of measuring the amount of traffic congestion.

Level of Service "E" has been established as the minimum systemwide LOS traffic standard in the Kern County Congestion Management Plan. Those roads currently experiencing worse traffic congestion have been accepted at their existing traffic level of LOS F. By so doing, cities and the County will not be penalized through loss of gas tax funds for not meeting the new Congestion Management Program LOS E standard. Existing LOS F locations are listed below:

- Rosamond Blvd – 10th St West to SR14;
- SR 99 NB – White Ln to Wilson Rd;
- SR 58 – SR 99 to Cottonwood Rd;
- SR 58/Rosedale Hwy – SR 99 to Main Plaza Dr;
- 24th St (SR 178) – Oak St to N St; SR 204/Golden State Hwy – F St to Chester; and
- Seventh Standard Rd – SR99 to Coffee Rd.

Projects along one of the existing LOS F segments, with 1 or more peak hour trips (or as required by the most recent Caltrans *Guide for the Preparation of Traffic Impact Studies),* shall include a deficiency plan, for the affected corridor segments as part of the traffic study for the project's environmental document or as a separate stand alone deficiency plan for the affected corridor.

In addition to the LOS standards of the Congestion Management Program, some cities and the County of Kern have adopted policies to help maintain their own LOS standards. In most cases, these local policies are aimed at maintaining LOS C. These standards are not intended to replace local policies by allowing greater congestion; they serve a very different purpose. The locally adopted LOS standards are tied to the cities' and County's authority to approve or deny development, require mitigation measures, and construct roadway improvements. The Level-of-Service standard is a planning tool to be used in the development review process. Failure to meet the local standard does not have direct negative federal financial impacts.

Figure 2-9

Mitigating Deficiencies

The Deficiency Plan is similar to a Corridor System Management Plan. The deficiency plan portion of the traffic study should analyze the multimodal LOS for the affected portion of the Congestion Management Program network and parallel corridors as appropriate.

- Complete Streets Analysis or Multimodal LOS – the modes analyzed in the multimodal LOS analysis should be dependent on the place type. For example, in most cases rural inter-city travel need not look at pedestrian capacity. The plan should provide mitigation and a monitoring program to offset impacts to all modes through incident and demand management strategies;
- Corridor Analysis – Corridor impacts to a mode may be mitigated by providing capacity on a parallel facility. For example, an impacted facility may lack pedestrian and bike facilities; however, a parallel bike/pedestrian path within the corridor could offset this deficiency. In addition, impacts to transit buses stuck in the same traffic congestion as single occupancy vehicles, could be mitigated by the provision of a transit/HOV lane in the congested travel

direction during peak periods. Additional mitigation for congestion could be through the provision of a freeway service patrol to rapidly clear traffic accidents during peak periods;

- Multimodal Circulation Plans – At their next regularly scheduled update, local circulation plans should consider multimodal LOS standards. In addition, to the road network, circulation plans should include bike, pedestrian and transit networks. The bike/pedestrian/transit networks should provide for transit oriented development centers that could serve as transfer points and nodes for future express and/or regional service. The centers also should provide a connected network linking to the future High Speed Rail and passenger rail stations. These centers should be reflected in the Land Use Element of the General Plan with higher densities and a mix of land uses that make for a vibrant pedestrian oriented destination. The centers should use multi-modal LOS standards within their boundaries to ensure capacity for bike, walk and transit;
- Funding Mitigation – Funding for mitigation may be phased as part of the mitigation monitoring program. Developer funded mitigation would be timed with the completion of phases that created the impacts. Other funding sources could include local and regional traffic impact fees, a transportation sales tax measure, and the Kern Motorist Aid Authority DMV fee for freeway service patrols and traveler assistance 511 services. Consideration of multimodal LOS may result in a cost savings for building and maintaining wider roads that handle greater traffic volumes. That savings could be redirected into building the transit, bike and pedestrian facilities. Local governments should consider performing a cost benefit analysis to compare adding an extra free flow lane each direction to a congested corridor versus adding capacity for transit, bike, walk and/or HOV. The analysis may result in reduced transportation mitigation that may increase affordable housing; and
- Congestion Pricing – On major freeway and highway facilities, HOV lanes, bus lanes and toll lanes can be used to fund new capacity for single occupancy vehicle traffic. At the national level, odometer based tolling is being considered to fund and maintain infrastructure that support goods movement activity. Variable parking cost can also be used as a strategy to reduce congestion during peak periods.

Congestion Management Agency Role

Under the state CEQA guidelines environmental checklist, the Congestion Management Agency monitors a countywide Level-of-Service standard, and withholds Federal gas tax funds if the standard is not met or mitigated. Local agencies often establish more stringent level of service requirements as part of the Circulation Plans. The Congestion Management Program standard is not viewed as being in conflict with locally-adopted LOS standards that are more stringent.

It is the Congestion Management Agency's responsibility to ensure that all cities and the County are following the Congestion Management Program. Of particular importance is the establishment of traffic counts and regional traffic modeling. Kern Council of Governments completes one coordinated and comprehensive review of current traffic data with each RTP update; each city and the County is evaluated in the same manner. Through the Kern Regional Traffic Count Program, the cities, County and Caltrans undertake traffic counts on their roads annually. Use of recent peak hour traffic counts as a basis for traffic forecasting eliminates much of the "guesswork" and ensures that the review is based on actual traffic conditions. Provisions include:

- All roadway segments on the Congestion Management network shall maintain a level of service of “E” or better;
- Any roadway segments on the Congestion Management network that are operating at a level of service worse than "E" on the adoption of the first Congestion Management Program shall be required to prepare a deficiency plan as part of the traffic study for a proposed development. The plan shall provide mitigation through transportation system management and travel demand management strategies and/or capacity for other modes such as transit and HOV that is not affected by the slower speeds of congested Single Occupancy Vehicle (SOV) travel. The plan shall provide mitigation along the congested portion of the corridor, if mitigation of the affected CMP network links is not feasible; and

- The CMP will assume that a recently complete capacity increasing improvement will operate better than LOS F until the next transportation model update indicates that the segment has been degraded to LOS F again, as indicated by observed traffic counts.

Safety Element

SAFETEA-LU added a new stand-alone factor to "increase the safety of the transportation system for motorized and non-motorized users." Kern COG is committed to promoting increased safety, and the performance measures of the Regional Transportation Plan include safety as a critical factor.

Caltrans published the final version of the statewide State Highway Safety Plan (SHSP) in September 2006. The Safety Plan guides safety activities regarding all users on all public roadways. Key points of the Safety Plan include:

- Highlighting challenges to roadway user safety on California's roads;
- Painting the picture of fatalities experienced on California's roads;
- Proposing high-level strategies to reduce fatalities for each challenge; and
- Guiding implementation of specific projects and activities through 2010.

2.5 RELATIONSHIP TO OTHER PLANS AND PROGRAMS

The 2011 RTP identifies short- and long-term funding expected to be available over the next 25+ years and how those funds will be allocated to various transportation programs. The RTP is a planning guide containing transportation policy and projects through Fiscal Year 2034/35). The Plan includes programs and policies for congestion management, transit, bicycles and pedestrians, roadways, freight, and finances. The RTP's primary use is as a regional long-range plan for federally funded transportation projects. It also serves as a comprehensive, coordinated transportation plan for all governmental jurisdictions within the region.

Numerous jurisdictions have different transportation implementation responsibilities under the Plan, including Caltrans, County of Kern, and each of the cities within the County. RTPs are planning documents developed by Regional Transportation Planning Agencies (RTPAs) and Metropolitan Planning Organizations (MPOs) in cooperation with Caltrans and other stakeholders. The plans are developed to provide a clear vision of regional transportation goals, policies, objectives and strategies. Specifically, the Kern County 2011 RTP has been developed to address the following:

- Assessment of current modes of transportation and the potential of new travel options within the region;
- Prediction of future needs for travel and goods movement;
- Identification and documentation of specific actions necessary to address the region's mobility and accessibility needs;
- Identification of guidance and documentation of public policy decisions by local, regional, state and federal officials regarding transportation expenditures and financing;
- Identification of needed transportation improvements;
- Promotion of consistency between the California Transportation Plan, the regional transportation plan, and other transportation plans developed by cities, counties, districts, private organizations, tribal governments, and state and federal agencies in responding to statewide and interregional transportation issues and needs;
- Providing a forum for participation and cooperation, and facilitates partnerships that reconcile transportation issues which transcend regional boundaries; and

- Involvement of the public, federal, state and local agencies, 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.

Further, the RTP addresses the effects of planned growth and development on the existing and planned transportation system. The resultant analysis documents existing and future year (Year 2035) multi-modal transportation system conditions. Modes studied include highways and arterials, public transit, non-motorized systems, passenger and freight rail, and aviation. Figure 2-2 provides a graphic of the existing Regionally Significant Road System defined in the RTP. The analysis conducted as part of this EIR considers the effects of projects and programs outlined in the 2011 RTP.

2.6 RTP APPROVAL PROCESS

The process to approve the RTP and the associated EIR includes: (1) assessing Kern County's transportation needs, identifying projects to address the needs, and addressing air quality conformity requirements; (2) conducting public hearings on the RTP and SEIR; and (3) approving resolutions passed by Kern COG certifying the SEIR and approving the RTP. Public involvement will be encouraged throughout the process.

2.7 CONTENTS OF THE 2011 RTP

The 2011 RTP consists of required elements and is organized into various chapters. A description of each Chapter for the RTP follows.

- Chapter 1. Introduction;
- Chapter 2. Transportation Planning Policies;
- Chapter 3. Planning Assumptions;
- Chapter 4. Strategic Investments;
- Chapter 5. Financing Transportation;
- Chapter 6. Future Links;
- Chapter 7. Monitoring Progress;
- Chapter 8. References; and
- Appendices. (Includes the San Joaquin Valley Regional Transportation Overview and other required documents)

2.8 INTENDED EIR USES

As a Program EIR, which is a type of first-tier document (CEQA Guidelines Sec. 15152), the document is prepared for an agency program or series of actions that can be characterized as one large project. Typically, such a project involves actions that are closely related geographically and are logical parts of a chain of contemplated events, rules, regulations, or plans that govern the conduct of a continuing program with generally similar environmental effects and mitigation measures.

When a Program EIR has been prepared, subsequent activities within the program must be evaluated to determine whether an additional CEQA document needs to be prepared. When subsequent activities involve site-specific issues, the Lead Agency uses a written checklist to document its determination that:

- Environmental effects of the subsequent project were covered in the Program EIR and found to be within the scope of the Program EIR – no additional environmental review is required; and/or
- A subsequent activity would have effects not within the scope of the Program EIR. The Lead Agency must prepare a new Initial Study leading to a Negative Declaration, Mitigated Negative Declaration, or an EIR.

This Program SEIR was prepared as a 'tiered' document. The tiered concept is a multi-level approach to streamline subsequent environmental reviews. The first-tier document is an analysis of general matters (i.e., the 2011 RTP and related impacts to serve full development outlined in the RTP). Subsequent tiers (later EIRs and Negative Declarations) include analyses of narrower, subsequent projects by "incorporating by reference" the general discussions from the broader first-tier EIR. Second-tier environmental reviews focus on the impacts of individual projects that implement the plan, program, or policy.

The environmental areas addressed in this SEIR were identified from the Notice of Preparation, which is included as Appendix A. The scope of first-tier EIRs is limited to a description of those impacts and mitigation measures related to project implementation without being highly speculative. Each improvement project will be subsequently reviewed for potential environmental effects.

Kern COG, County of Kern, the cities, Caltrans, and other responsible and trustee agencies will use this SEIR[1] for:

- *RTP Updates;*
- *Transportation Improvement Programs;*
- *Grants and other funding source projects;*
- *Project Study Reports;*
- *Design Studies;*
- *Corridor Studies;*
- *Transit Plans and Studies;*
- *Non-Motorized Plans and Studies;*
- *Aviation Plans and Studies;*
- *Passenger and Freight Rail Plans and Studies;*
- *Other Plans and Studies including those for TDM and ITS Improvement Projects;*
- *General Plan Amendments;*
- *Review of transportation and land use development projects;*
- *Capital Improvement Program budgeting and project priorities; and*
- *Encroachment Permits.*

The following responsible and trustee agencies will use this SEIR for potential permits/actions:

- California Dept. of Fish and Game -- *Improvement projects involving Stream Alteration Permits and California Endangered Species Act;*
- California Dept. of Transportation -- *Local Assistance Projects, Transportation Improvement Program, and development permits/encroachment permits on State highways;*
- Cities -- regional transportation planning, Capital Improvement Program budgeting and project priorities, review of transportation and land use development projects, General Plan Amendments, and encroachment permits;

[1] For the purposes of CEQA, the term "responsible agency" includes all public agencies other than the Lead Agency, which have discretionary approval power over the project (CEQA Guidelines Sec. 15381). A "trustee agency" means a state agency having jurisdiction by law over natural resources affected by a project, which are held in trust for the people of California. Trustee agencies include the California Dept. of Fish and Game, the State Lands Commission, and the State Dept. of Parks & Recreation (CEQA Guidelines Sec. 15386).

- County of Kern (public, Board of Supervisors, Redevelopment Agency, Planning Commission, Airport Land Use Commission, and County staff) -- regional transportation planning, Capital Improvement Program budgeting and project priorities, review of transportation and land use development projects, General Plan Amendments, and encroachment permits;
- Kern County Water Conservation District and regional irrigation districts/companies -- *Improvement projects involving waterway crossings, channel re-alignments, piping, etc.;*
- San Joaquin Valley Air Pollution Control District (SJVAPCD), Kern County Air Pollution Control District (APCD), and the Mojave Desert Air Quality Management District (MDAQMD) -- *air quality attainment plan consistency and air quality mitigation measures for improvement projects;*
- Kern Council of Governments (Kern COG) -- *Development of the Regional Transportation Improvement Program and other regional transportation planning documents;*
- School Districts -- *Improvement projects adjacent to or near public schools;*
- Federal agencies such as the Federal Highway Administration, Federal Transit Agency, Fish and Wildlife Service, Housing and Urban Development (Community Development Block Grant program), etc. – *funding review consistent with SAFETEA-LU requirements and provisions, and subsequent improvement projects funding and U.S. Endangered Species Act; and*
- Economic Development Commission – *Strategic Plan development, identification of infrastructure and road improvements.*

2.9 APPROVALS REQUIRED TO IMPLEMENT THE PROJECT

Kern COG will certify this SEIR prior to approval of the 2011 RTP.

2.10 EIR DEVELOPMENT/APPROVAL PROCESS

♦ Draft SEIR submitted to Kern COG for distribution	April 28, 2010
♦ Draft SEIR Notice of Completion submitted to the State Clearinghouse for distribution to state agencies	April 28, 2010
♦ Availability of Draft SEIR for public review published In local newspapers and on Kern COG website	April 30, 2010
♦ Draft SEIR available at Kern County Libraries, and Kern COG offices	April 30, 2010
♦ Draft SEIR mailed to organizations, agencies and individuals for review and comment	April 30, 2010
♦ Draft SEIR 45-day public comment period closed	June 14, 2010
♦ SEIR submitted to Kern COG for distribution	June 30, 2010

- Review of SEIR by local agencies June 30 – July 15, 2010
- Public Hearing on SEIR by Kern COG July 15, 2010

2.11 ORGANIZATION OF THE EIR

This SEIR consists of the following eight sections and several appendices. Each one of these sections begins with an overview of general EIR terminology and/or requirements. *These overviews are in italic typeface.* Technical and background materials, such as the Notice of Preparation (NOP) and NOP Comments are in the Appendices.

1.0 Executive Summary
2.0 Introduction/Project Description
3.0 Environmental Setting, Impacts, Mitigation Measures, and Level of Significance
4.0 Comparison of Project Alternatives
5.0 Long-Term Effects
6.0 List of Preparers, Organizations, and Agencies Referenced or Consulted
7.0 Written Comments and Final Responses to Comments on the Draft SEIR
8.0 Changes, Additions and Corrections to the Draft SEIR

Appendices

A Notice of Preparation (NOP)
B NOP Comments
C Statement of Overriding Considerations
D Mitigation Monitoring Program

Table 2-4 compares the required contents of an EIR to this SEIR. When the required SEIR elements are not separated into distinct sections, the document must include a statement where each element is discussed.

2.12 EIR AND RTP AVAILABILITY

The Project and its environmental review document are available at:

Kern Council of Governments
1401 19th St., Suite 300
Bakersfield, CA 93301

Comments and questions should be referred to:

Ms. Marilyn Beardslee, Project Administrator
Ph: (661) 861-2191
Fax: (661) 3248215
E-mail: mbeardslee@kerncog.org

TABLE 2-4
Required Contents of an EIR

Required (CEQA Guidelines 15120)	*Environmental Impact Report*
Table of Contents or Index *(CEQA Guidelines 15122)*	Table of Contents
Summary *(CEQA Guidelines 15123)*	Executive Summary
Project Description *(CEQA Guidelines 15124)*	Introduction/Project Description
Environmental Setting *(CEQA Guidelines 15125)*	Setting, Impacts, Mitigation, and Level of Significance
Effects Not Found to be Significant	Setting, Impacts, Mitigation, and Level of Significance
Significant Environmental Impacts *(CEQA Guidelines 15126 & 15126.2)*	Setting, Impacts, Mitigation, and Level of Significance
Areas of Known Controversy	Setting, Impacts, Mitigation, and Level of Significance
Alternatives *(CEQA Guidelines 15126.6)*	Project Alternatives
Mitigation Measures *(CEQA Guidelines 15126.4)*	Setting, Impacts, Mitigation, and Level of Significance
Growth-inducing Impacts *(CEQA Guidelines 15126.2(d))*	Long-Term Effects
Significant Irreversible Changes *(CEQA Guidelines 15126.2(c))*	Long-Term Effects
Cumulative Impacts	Long-Term Effects
Organizations and Persons Consulted	Organizations, Agencies and Persons Consulted
Comments & Recommendations on the Draft EIR	Written Comments and Final Responses to Comments on the Draft SEIR
List of Persons, Organizations & Public Agencies Commenting on the Draft EIR	Written Comments and Final Responses to Comments on the Draft SEIR
Responses by the Lead Agency	Written Comments and Final Responses to Comments on the Draft SEIR

3.0 ENVIRONMENTAL SETTING, IMPACTS, MITIGATION MEASURES, & LEVEL OF SIGNIFICANCE

An EIR is required to:

- *Provide a description of the physical environmental conditions in the vicinity of the project (local and regional perspectives). Each environmental condition includes an Introduction, which introduces the topic and provides an overview of the impacts to be evaluated. In addition, this section includes a regulatory setting (as appropriate) or a discussion of the various regulations and regulatory agencies pertinent to each impact category. Finally, this section includes the environmental setting, which normally constitutes the baseline physical conditions, and a discussion of the policy and technical background by which a lead agency determines whether an impact is significant*

  The environmental setting section is to be no longer than is necessary to get an understanding of the significant effects of the proposed project and its alternatives. The "environment" (CEQA Guidelines 15360) refers to the physical conditions, which exist within the area that will be affected by a proposed project. The area involved shall be the area in which significant effects would occur either directly or indirectly because of the project. The environment includes both natural and man-made conditions; and.

- *Examine changes to the physical environment in the affected area by identifying direct and indirect significant effects as well as considering long- and short-term effects. This includes a description of significant impacts including those that can be mitigated – but not reduced to a level of insignificance. A "significant effect on the environment" (CEQA Guidelines 15382) means a substantial, or potentially substantial, adverse change in any of the physical conditions within an area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant.*

  This section must contain a methodology or a description of the methods applied to determine environmental impacts. In addition, this section must include criteria for significance or a description of the criteria used to evaluate the significance of potential environmental impacts. This results in an analysis of the beneficial and adverse effects of the proposed project relative to the criteria for significance. The individual projects will still be required to comply with the requirements of CEQA. Detailed analysis of the projects proposed in the Plan would be the responsibility of the agencies approving those projects.

  The CEQA Guidelines recommend tools for determining the potential for significant environmental effects including:

  - *Initial Study checklist [(see the Notice of Preparation (NOP) – Appendix A)];*
  - *CEQA's Mandatory Findings of Significance (see the NOP, Appendix A);*
  - *Consultation with other agencies (See Appendix B – NOP Comments Letters); and*
  - *Particular agency thresholds of significance.*

  The NOP determined that a Subsequent Program EIR is required for the Regional Transportation Plan (RTP) or "Project" because it could result in significant environmental impacts considering the following environmental issue areas:

  - *Aesthetics;*
  - *Agricultural Resources;*

- *Air Quality;*
- *Biotic Resources;*
- *Climate Change;*
- *Cultural Resources;*
- *Geology/Soils;*
- *Hazards & Hazardous Materials;*
- *Hydrology/Water Quality;*
- *Land Use/Planning;*
- *Noise;*
- *Population/Housing;*
- *Public Utilities, Other Utilities & Services Systems*;
- *Social & Economic Effects; and*
- *Transportation/Traffic.*

The NOP also concluded that adoption of the Regional Transportation Plan would result in less than significant impacts on the following environmental issue areas if applicable policies and standards were applied:

- *Recreation; and*
- *Mineral Resources.*

After review of the NOP comments, it was determined that this Subsequent Program EIR should focus on the same environmental issues referenced in the NOP and listed above. Finally, as a result of comments received on the Draft SEIR, a new environmental impact area was added – Energy and Energy Conservation.

- *Describe feasible mitigation measures, which would minimize significant adverse impacts. Wherever significant adverse impacts have been identified, mitigation measures are recommended to minimize impacts; and*

- *Prepare an evaluation of the level of significance of individual impacts assuming implementation of the recommended mitigation measures.*

Based on findings identified in this Section of the SEIR, the preferred project is the Multi-Modal Project Alternative or projects contained in the 2011 RTP and in the Air Quality Impact and Conformity Analysis prepared to analyze projects contained in the RTP. This alternative was analyzed considering historical growth rates in vehicle miles traveled (VMT) and vehicle trips (VT), as well as anticipated growth in the use of other forms of transportation such as transit, rail, aviation, and non-motorized.

Improvement projects evaluated and identified under this alternative are "financially constrained" in accordance with the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) and air quality conformity requirements. Further, this alternative focuses on "traditional" land use planning activities, i.e., designation of planned growth and development consistent with established land use plans and density policies. This includes the designation of urban and rural development consistent with adopted local agency General Plans.

3.1 AESTHETICS

The aesthetic quality of the Kern County regional transportation system is comparable to other transportation systems in the San Joaquin Valley. The County is relatively flat within the valley and desert regions. The valley areas are met in the south, east and west by foothill and mountain ranges. The aesthetic quality of the County has been affected by various forms of transportation for some time. As a result, the existing and planned multimodal transportation system is not considered to have a significant impact on the aesthetic quality in Kern County. However, current aesthetic values can be maintained as the planned regional transportation system is implemented.

The aesthetic appearance of the Kern County urban and rural area is a function of both the natural landscape and man-made elements that create an urban and rural character and design. Because transportation facilities can have a major influence on human perception of the visual environment, this section addresses the general aesthetic landscape of the region and assesses the potential impacts from region-wide construction of at- and above-grade facilities.

Regulatory

A number of federal, state, and local agencies establish policies and programs relative to visual resources and impacts on those resources, as follows:

Federal Highway Administration (FHWA) – National Scenic Byways Program

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

United States Bureau of Land Management (BLM) – Scenic Areas

The BLM designates some of its holdings as Scenic Areas and some roadways in remote areas as Back Country Byways.

United States Forest Service (USFS) – National Scenic Byways Program

The USFS also has a National Scenic Byways Program, independent from the BLM program, to indicate roadways of scenic importance that pass through national forests.

National Environmental Policy Act (NEPA)

Provides information on potential impacts to the environment, including aesthetic resources (Section 101 [b]). NEPA is implemented by regulations included in the Code of Federal Regulations (40CFR6), which require careful consideration of the harmful effects of federal actions or plans, including projects that receive federal funds, if they may have a significant adverse affect on the environment. Impacts on scenic resources (40CFR6, Section 6.108 [f]) and conflicts with state, regional, or local plans and policies (4040CFR6, Section 6.108 [b]) are among the considerations included in the regulations. While NEPA compliance is not required for the project, NEPA compliance will be required for transportation improvement projects that will be financed using federal funds. The regulations also require projects requiring NEPA review seek to avoid or minimize adverse effects of proposed actions, and restore and enhance environmental quality as much as possible.

Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)

In 2005, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) was signed into law. The Act provides guaranteed funding for highways, highway safety, and public transportation totaling $244.1 billion, representing the largest surface transportation investment ever. The Act follows two bills that highlighted surface transportation funding needs—the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and the Transportation Equity Act for the 21st Century (TEA-21), which shaped the highway program to meet changing transportation needs throughout the nation. SAFETEA-LU addresses challenges such as improving safety, reducing traffic congestion, improving efficiency in freight movement, increasing intermodal connectivity, and protecting the environment. SAFETEA-LU also gives state and local transportation agencies more flexibility to solve transportation problems.

California Environmental Quality Act (CEQA)

Similar to NEPA, CEQA affords protection for the environment, including aesthetic resources. The CEQA Guidelines provide four criteria that may be used to evaluate the significance of visual quality impacts: negative effects on a scenic vista, damage to scenic resources within a state scenic highway, degradation of the visual character or quality of a site and its surroundings, and creation of a new source of substantial light or glare affecting views.

California Department of Transportation (Caltrans)

The California Scenic Highways Program was created by the State Legislature in 1963 to preserve and protect scenic highway corridors from change that would diminish the aesthetic value of lands adjacent to highways. To be included in the state program, the highways proposed for designation must meet Caltrans' eligibility requirements and have visual merit. According to the Caltrans California Scenic Highway Mapping System, while there are no designated State Scenic Highways in Kern County, three (3) highways are eligible for designation including State Route (SR) 14, SR 58, and US 395 (reference Figure 3-1).

County and City Controls

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

In addition to federal and state designations, counties and cities have their own scenic highway designations, which are intended to preserve and enhance existing scenic resources. Criteria for designation are commonly included in the conservation/open space element of the city or County General Plan.

Cities and counties can use open space easements as a mechanism to preserve scenic resources, if they have adopted open-space plans, as provided by the Open Space Easement Act of 1974 and codified in California Government Code (Section 51070 et seq.). According to the Act, a city may acquire or approve an open-space easement through a variety of means, including use of public money.

Environmental Setting

Definitions

- View shed: A view shed is the area within the field of view of an observer and is commonly used to describe the extent of a scenic resource. The extent of a view shed can be limited by a number of intervening elements, including trees and other vegetation, built structures, or topography, such as hills and mountains; and

- Visual Quality: Visual quality is the character, condition, and quality of a scenic landscape or other visual resource and how it is perceived and valued by the public. Various jurisdictions within the Kern COG region, such as cities, counties or federal or regional agencies, provide the guidelines regarding the preservation and enhancement of visual quality in their plans or regulations. Because of the size and diversity of Kern County, there are no uniform standards that apply to all areas of the region.

In urban areas, roadway rights-of-way comprise 20-30 percent of the total land area. As a result, transportation systems have a major influence on human perception of the visual environment. As most vehicular movement occurs along transportation corridors, their placement largely determines what parts of the area will be seen. Even for people not using the transportation system at a particular time, or who never use certain modes of travel, transportation systems are usually a dominant element of the visual environment.

Air quality and visibility affect view sheds and visual quality. In the Kern County, high pollutant emissions – combined with poor natural ventilation in the air basin – result in degraded visibility. Of particular note is photochemical smog and airborne particulates, finely divided solids or liquids, such as soot, dust, aerosols, and mists that absorb sunlight, producing haze and reducing visibility.

Aesthetically Significant Resources

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

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

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

Designated State and Local Scenic Highways

While there are no designated State Scenic Highways in Kern County, according to the Caltrans California Scenic Highway Mapping System, there are three (3) highways eligible for designation including State Route (SR) 14, SR 58, and US 395. Figure 3-1 depicts the location of these eligible highways. These designations represent recognition of the high scenic and visual qualities of these corridors. Specific design guidelines are required by local regulation for all designated highways, and the state-designated corridors must be reviewed when improvements are proposed to determine if the highway will remain eligible for designation as a scenic corridor. The remainder is locally designated highways or streets.

Light and Glare

General sources of light can be categorized as follows:

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

Examples of direct light associated with transportation systems can include highway signs, car headlights, and street/highway lights, as well as illumination from the interior of transit facilities. An example of indirect light can include the reflection of sunlight from a new lightly colored road surface or highly reflective noise wall.

Environmental Impacts, Mitigation Measures, and Significance After Mitigation

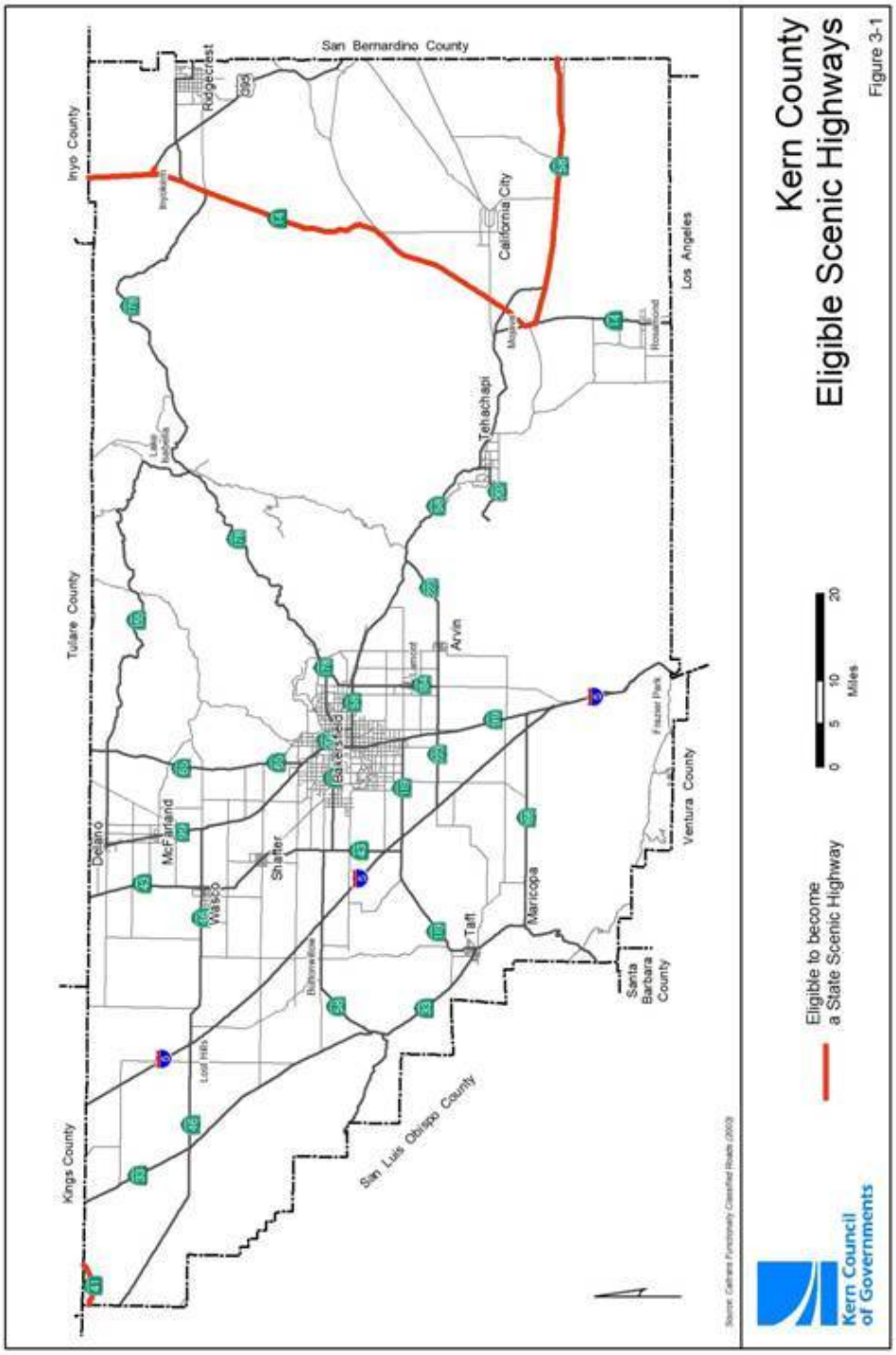
Potential impacts to scenic resources and vista points were based on available Kern COG data on state-designated highways and vista points. This analysis discusses and assesses potential impacts to designated scenic resources, including scenic highways or vista points that may be generated from projects proposed in the RTP. This analysis also discusses the potential impact of additional light and glare from proposed projects within the RTP. Mitigation measures are provided if the impact has been identified as being potentially significant.

Generally, greater changes from existing conditions result in impacts that are more significant. For example, the construction of a new roadway generally has a greater impact on scenic resources than the widening of an existing one. Road widening, however, can have significant local impacts especially when requiring the removal of trees and other important landscape buffers, or when construction of noise barriers or other visual impediments are necessary.

Criteria for Significance

The following significance criteria were used to determine the level of significance of impacts on scenic resources resulting from the proposed Project. Significance criteria were developed based on Appendix G of the State CEQA Guidelines and on professional judgment. In general, an individual improvement project contained within the RTP would result in a significant visual impact if it:

- Blocks scenic resources (i.e., mountains, ocean, rivers, or significant man-made structures) as seen from an existing transportation facility or from the surrounding area;
- Alters the appearance of designated scenic resources along or near a state-designated or county-designated scenic highway or vista point;


Kern County
Eligible Scenic Highways
Figure 3-1
Eligible to become a State Scenic Highway
0 5 10 20
Miles
Kern Council of Governments
San Bernardino County
Inyo County
Tulare County
Kings County
San Luis Obispo County
Santa Barbara County
Ventura County
Los Angeles
Ridgecrest
California City
Tehachapi
Arvin
Lamont
Bakersfield
Delano
McFarland
Shafter
Wasco
Taft
Maricopa
Buttonwillow
Lost Hills
Lake Isabella
Frazier Park
Rosamond
Mojave
Inyokern

- Creates significant contrasts, with the scale, form, line, color and/or overall visual character of the existing landscape setting;
- Creates a new source of substantial light or glare, which would affect day or nighttime views; and
- Is inconsistent with applicable local guidelines and regulations.

Generally, proposed projects are of the following two types:

- New Systems (new highway and transit facilities); and
- Modifications to Existing Systems (widening roads, addition of carpool lanes, grade crossings, intelligent transportation systems, maintenance, and service alterations).

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

In general, scenic resources could be significantly impacted by projects proposing new systems. Specifically, construction and operation of projects proposed within the RTP could significantly impact scenic resources located in the vicinities of these "new system" projects. "Modification projects" would result in short-term, less significant, construction impacts to scenic resources.

Impact 3.1.1 – Views Impacts

Construction and implementation of individual projects could potentially impede or block views of scenic resources as seen from the transportation facility or from the surrounding area. This could be a potentially significant impact.

Construction of new facilities or development of previously undisturbed sites could potentially block or impede views of scenic resources in a given area. For example, construction of highways could block or impede views of area mountains and other scenic resources. Grade separated facilities could block or impede views of surrounding scenic resources during and after construction. Moreover, the elevation and scale of the proposed grade separated facilities could be visually intrusive to surrounding areas (depending on the degree of visibility of the transportation facility).

Construction of transportation facilities that involve modifications like widening or upgrading existing roadways would involve lesser changes to the visual environment. These "modification projects" would most likely occur within existing roadway facilities and/or could require acquisition of right-of-way property. However, such changes may not block or impede views of scenic resources to a greater extent than at present.

Mitigation Measures

All mitigation measures will be included in individual improvement project-level analysis, as appropriate. The implementation agency or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with mitigation measures.

- Implement design guidelines, local policies, and programs aimed at protecting views of scenic corridors and avoiding visual intrusions; and

- To the extent feasible, noise barriers that will not degrade or obstruct a scenic view will be constructed. Noise barriers will be well landscaped, complement the natural landscape and be graffiti-resistant.

Significance After Mitigation

This impact is considered significant and unavoidable, because it is likely that there will be situations where visual impacts cannot be mitigated to a less than significant level.

Impact 3.1.2 – Scenic Highway and Vista Point Impacts

Construction and implementation of the projects could alter the appearance of scenic resources along or near designated scenic highways and vista points. This could be a potentially significant impact.

The State Legislature created California Department of Transportation's (Caltrans) State Scenic Highway Program in 1963 to preserve and protect scenic highway corridors from change that would diminish the aesthetic value of lands adjacent to highways. The state laws governing the Scenic Highway Program are stated in the California Streets and Highways Code, Section 260.

The State Scenic Highway System includes a list of highways that have been designated by Caltrans as scenic highways or are eligible for designation as scenic highways. These highways are designated in section 263 of the Streets and Highways Code. Scenic highway designation can offer the following benefits.

- Protection of the scenic values of an area;
- Enhancement of community identity and pride, encouraging citizen commitment to preserving community values;
- Preservation of scenic resources to enhance land values and make the area more attractive; and
- Promotion of local tourism that is consistent with the community's scenic values.

According to Caltrans, a scenic corridor is the land generally adjacent to and visible from the highway. A scenic corridor is identified using a motorist's line of vision. A reasonable boundary is selected when the view extends to the distant horizon. Caltrans outlines the following minimum requirements for scenic corridor protection: regulation of land use and density of development; detailed land and site planning; control of outdoor advertising; careful attention to, and control of, earthmoving and landscaping; and careful attention to design and appearance of structures and equipment.

Some of the proposed projects in the RTP include countywide improvements to highways, arterials and transit systems. These improvements could potentially fall within a designated scenic corridor.

Mitigation Measures

All mitigation measures will be included in individual improvement project-level analysis, as appropriate. The implementation agency or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with mitigation measures.

- Avoid construction of transportation facilities in state and locally designated scenic highways and vista points; and

- If transportation facilities are constructed in state and locally designated scenic highways and/or vista points, design, construction, and operation of the transportation facility will be consistent with applicable guidelines and regulations for the preservation of scenic resources along the designated scenic highway.

Significance After Mitigation

This impact is considered significant and unavoidable because it is likely that there will be situations where visual impacts cannot be mitigated to a less than significant level.

Impact 3.1.3 – Visual Character Impacts

Construction and implementation of the projects could create significant contrasts with the overall visual character of the existing landscape setting. This could be a potentially significant impact.

There is an extraordinary range of urban characteristics and urban-natural environmental contrasts throughout the RTP Project area. Given the size and diversity of the region, there are no standards that apply to all areas. Therefore, local planning guidelines regarding visual quality of urban areas must be researched and adhered to. A component of the urban environment is the transportation infrastructure. Many roads have been built throughout the region, which connect urban concentrations with natural areas found in the rural area. Transportation systems have a major effect on the visual environment. As most vehicular movement occurs along transportation corridors, their placement largely determines what parts of the region will be seen. Arterials and freeways comprise a major component of the existing visual environment in the region.

Development of previously undeveloped sites could result in impacts to visual resources. Construction of a new transportation system through a developed area could result in land use changes that could also result in impacts to visual resources. For example, the extension of a highway through an urban area could require some acquisition of residential, commercial or industrial property, thereby changing the land use, and consequently, visual quality of the given area. "Modification projects" that involve the widening or upgrading of existing roadways can be designed to complement the existing system, and therefore, would involve lesser changes to the visual character of the existing landscape setting. Therefore, impacts from "modification projects" would be less than significant.

Mitigation Measure

All mitigation measures will be included in individual improvement project-level analysis, as appropriate. The implementation agency or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with mitigation measures.

- Develop design guidelines for each type of transportation facility that make elements of proposed facilities visually compatible with surrounding areas. Visual guidelines will, at a minimum, include setback buffers, landscaping, color, texture, signage, and lighting criteria. The following methods will be employed whenever possible:

  - Transportation systems will be designed in a manner where the surrounding landscape dominates;
  - Transportation systems will be developed to be compatible with the surrounding environment (i.e., colors and materials of construction material);
  - If exotic vegetation is used, it will be used as screening and landscaping that blends in and complements the natural landscape;
  - Trees bordering highways will remain or be replaced so that clear cutting is not evident; and
  - Grading will blend with the adjacent landforms and topography.

- Project implementation agencies shall design projects to minimize contrasts in scale and massing between the project and surrounding natural forms and development. Project implementation agencies shall design projects to minimize their intrusion into important viewsheds and use contour grading to better match surrounding terrain. To the maximum extent feasible, landscaping along highway corridors shall be designed to add significant

natural elements and visual interest to soften the hard-edged, linear travel experience that would otherwise occur.

- Project implementation agencies shall use natural landscaping to minimize contrasts between the project and surrounding areas. Wherever possible, interchanges and transit lines shall be designed at the grade of the surrounding land to limit view blockage. Edges of major cut-and-fill slopes should be contoured to provide a more natural looking finished profile. Project implementation agencies shall replace and renew landscaping to the greatest extent possible along corridors with road widenings, interchange projects, and related improvements. New corridor landscaping shall be designed to respect existing natural and man-made features and to complement the dominant landscaping of surrounding areas.

- Project implementation agencies shall construct sound walls of materials whose color and texture complements the surrounding landscape and development and to the maximum extent feasible, use color, texture, and alternating facades to "break up" large facades and provide visual interest. Where there is room, project sponsors shall landscape the sound walls with plants that screen the sound wall, preferably with either native vegetation or landscaping that complements the dominant landscaping of surrounding areas.

Significance After Mitigation

This impact is considered significant and unavoidable, because it is likely that there will be situations where visual impacts cannot be mitigated to a less than significant level.

Impact 3.1.4 – Light and Glare Impacts

Construction and implementation of individual projects could potentially create a new source of substantial light or glare that would affect day or nighttime views of scenic resources as seen from the transportation facility or from the surrounding area. This could be a potentially significant impact.

There is an extraordinary range of urban characteristics and urban-natural environmental contrasts throughout the Project area. Given the size and diversity of the region, there are no standards that apply to all areas. Therefore, local planning guidelines regarding visual quality of urban areas must be researched and adhered to. Urban areas, due to numerous buildings in a concentrated space, experience significant light from all light source categories. Kern County includes various sized cities, and vast rural areas that are either located in the Valley region or are mountainous. The rural areas are primarily used for agricultural purposes. In smaller communities and in rural areas of the County, where urban development is less dense, light and glare impacts are not as frequent.

Mitigation Measure

All mitigation measures will be included in project-level analysis, as appropriate. The implementation agency or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with mitigation measures.

Cumulative Impacts 3.1.5

Kern County will experience significant growth and development by 2035. The 2011 RTP influences the pattern of this development, by increasing mobility and including transportation measures. At the regional scale, the 2011 RTP's contribution to impacts on the overall visual character of the existing landscape setting would be cumulatively significant.

The 2011 RTP includes land use policies that would affect the regional distribution of population, households, employment, and facilities and could impact aesthetics and views. The primary land use strategy discussed in the 2011 RTP emphasizes focusing development in accordance with applicable general plans, or infill development. Infill may result in taller buildings that obstruct views. However, an infill strategy will also help preserve open space in the region, thereby protecting many scenic resources.

The region will add increase in population and employment by 2035. Some of these people will live in households and work at jobs on land that is currently vacant. This conversion of vacant land to residential or other uses would have a significant impact on aesthetics and views. As a result of the population growth expected to occur in the region over the next 25 years, contrasts with existing visual character will occur either due to increased land use intensity in urban areas or due to development of previously vacant lands. Although implementation of mitigation measures would reduce potential cumulative impacts, the impacts would be considered cumulatively considerable.

Mitigation Measures

- Mitigation measures identified above should also be implemented as applicable to development projects throughout the region.

- In visually sensitive site areas and prior to project approval, local land use agencies shall apply development standards and guidelines to maintain compatibility with surrounding natural areas, including site coverage, building height and massing, building materials and color, landscaping, site grading, etc.

- Local agencies should develop design guidelines for each type of transportation facility that make light elements of proposed facilities visually compatible with surrounding areas. The following methods will be employed whenever possible:
  - Transportation systems will be designed in a manner where the surrounding landscape dominates;
  - Transportation systems will be developed to be compatible with the surrounding environment; and
  - Lighting devices will be employed such as downward facing light, light shields, and amber lumens.

Significance After Mitigation

This impact is considered significant and unavoidable because it is likely that there will be situations where visual impacts cannot be mitigated to a less than significant level.

3.2 AGRICULTURAL RESOURCES

Regulatory

Federal Agencies and Regulations

- The Environmental Protection Agency (EPA) implements NEPA.

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

- U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS)

  The NRCS maps soils and farmland uses to provide comprehensive information necessary for understanding, managing, conserving and sustaining the nation's limited soil resources. The NRCS manages the Farmland Protection Program, which provides funds to help purchase development rights to keep productive farmland in agricultural uses.

- United States Bureau of Land Management (BLM)

  Millions of acres of land are managed by the BLM in the Kern County region, primarily in the eastern portion of the region. The California Desert Conservation Area Plan is used to manage BLM controlled areas. The BLM also implements biological resource management policies through its designation of Areas of Critical Environmental Concern.

- United States Fish and Wildlife Service (USFWS)

  The USFWS designates critical habitat for endangered species and administers the Federal Endangered Species Act (FESA). The USFWS also manages the National Wildlife Refuges.

- United States Army Corps of Engineers (USACE)

  The USACE administers Section 404 of the Clean Water Act (CWA), which governs specified activities in waters of the United States, including wetlands. In this role, the USACE requires that a permit be obtained if a project would place structures, including dredged or filled materials, within navigable waters or wetlands, or result in alteration of such areas.

- Federal Farm and Ranchland Protection Program (FRPP)

  The FRPP is a voluntary easement purchase program that helps farmers and ranchers keep their land in agriculture. Pursuant to the Farmland Protection Policy Act (FPPA) of 1981 Sections 1539-1549, the Secretary of Agriculture is directed to establish and carry out a program to "minimize the extent to which Federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses, and to the extent practicable, will be compatible with state, unit of local government, and private programs and policies to protect farmland." (7 USC 4201-4209 & 7 USC 658). The program provides matching funds to state, tribal, or local governments and nongovernmental organizations with existing farmland protection programs to purchase conservation easements or other interests in land.

The FRPP is re-authorized in the Farm Security and Rural Investment Act of 2002 (Farm Bill). The NRCS manages the program. Technical Committee, awards funds to qualified entities to conduct their farmland protection programs. Although a minimum of 30 years is required for conservation easements, priority is given to applications with perpetual easements.

- Federal Environmental Quality Incentives Program (EQIP)

The EQIP is a voluntary program that provides assistance to farmers and ranchers who face threats to soil, water, air, and related natural resources on their land.

State Agencies and Regulations

- California Department of Conservation

In 1982, the State of California created the Farmland Mapping and Monitoring Program within the California Department of Conservation to carry on the mapping activity from the NRCS on a continuing basis. The California Department of Conservation administers the California Land Conservation Act of 1965, also known as the Williamson Act, for the conservation of farmland and other resource-oriented laws. Figure 3-2 provides a graphic display of existing farmland within Kern County. Additional mapping is on file with Kern COG.

- California Department of Transportation (Caltrans)

Any work within the right-of-way of a federal or state transportation corridor is subject to Caltrans regulations governing allowable actions and modifications to the right-of-way. Caltrans includes the Division of Aeronautics, which is responsible for airport permitting and establishing a county Airport Land Use Commission (ALUC) for each county with one or more public airports. ALUCs are responsible for the preparation of land use plans for areas near aviation facilities.

- California Department of Forestry and Fire Protection (CDF)

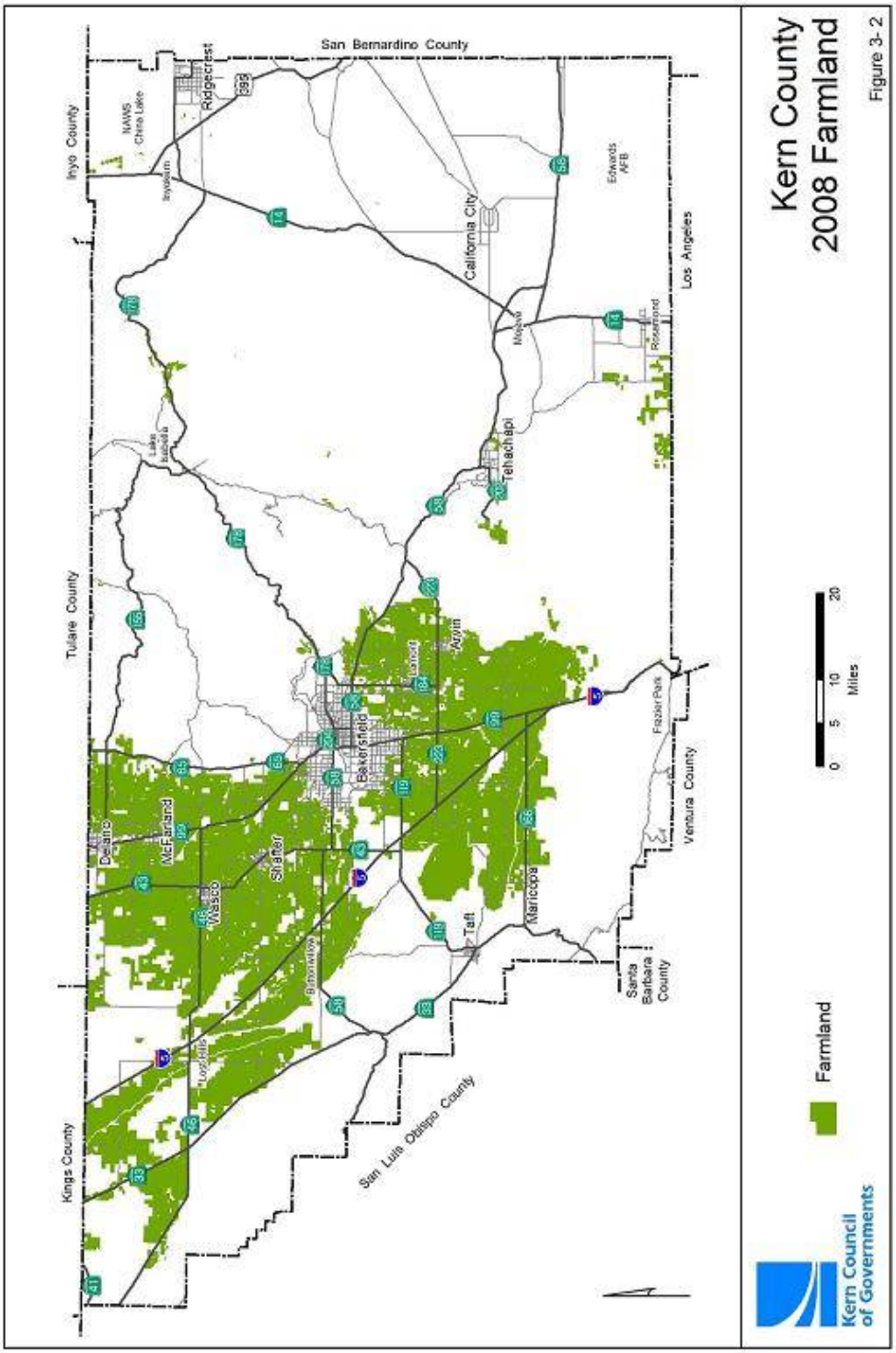
The CDF reviews and approves plans for timber harvesting on private lands. In addition, through its responsibility for fighting wildland fires, the CDF plays a role in planning development in forested areas.

- California Department of Parks and Recreation (CDPR)

The CDPR manages and provides sites for a variety of recreational and outdoor activities. The CDPR is a trustee agency that owns and operates all state parks and participates in land use planning that affects state parkland.

- California Department of Fish and Game (CDFG)

The land use mandate of the CDFG is to protect rare, threatened, and endangered species by managing habitat in legally designated ecological reserves or wildlife areas.


Kern County
2008 Farmland
Figure 3- 2
Farmland
0 5 10 20
Miles
Kern Council of Governments
San Bernardino County
Inyo County
Tulare County
Kings County
San Luis Obispo County
Santa Barbara County
Ventura County
Los Angeles
Ridgecrest
NAWS China Lake
Inyokern
California City
Edwards AFB
Mojave
Rosamond
Lake Isabella
Tehachapi
Arvin
Lamont
Bakersfield
Frazier Park
Delano
McFarland
Wasco
Shafter
Buttonwillow
Lost Hills
Taft
Maricopa

Public Agencies

Public agencies are entrusted with compliance with CEQA and its provisions are enforced, as necessary, through litigation and the threat thereof. CEQA defines a significant effect on the environment as a substantial, or potentially substantial, adverse change in the physical conditions within the area affected by the project. Land use is a required impact assessment category under CEQA.

- California Land Conservation Act of 1965 (Williamson Act)

  The Williamson Act is the only established program that directly involves state government in an administrative or fiscal capacity. The Act creates an arrangement (contract) whereby private landowners voluntarily restrict their land to agricultural and compatible open space uses under a rolling ten-year contract. In return parcels are assessed for property tax purpose at a rate consistent with their actual use, rather than potential market value.

- Farmland Security Zone: August of 1998, the Legislature enhanced the Williamson Act with the farmland security zone (FSZ) provisions. The FSZ provisions offer landowners greater property tax reduction in return for a minimum rolling contract term of 20 years.

- California Farmland Conservancy Program

  The CFCP seeks to encourage the long-term, private stewardship of agricultural lands through the voluntary use of agricultural conservation easements. The CFCP provides grant funding for projects which use and support agricultural conservation easements for protection of agricultural lands. As of April 2005, the CFCP has funded more than 50 easement projects in California, including nearly 25,000 acres in more than a dozen counties. CFCP has also funded a number of planning grants, including some with regional or statewide value. Within the eight-county study area, CFCP has awarded grants for planning and policy projects within the counties of Kern and Ventura.

Local Agencies and Regulations

- Land Conservation Trust

  A land trust is a nonprofit organization that, as all or part of its mission, actively works to conserve land by undertaking or assisting in land or conservation easement acquisition, or by its stewardship of such land or easements. A land conservation trust is another type of organization devoted to protecting open space, agricultural lands, wildlife habitats, and natural resource lands. There are approximately 80 established trusts in California. Local and regional land trusts, organized as charitable organizations under federal tax laws, are directly involved in conserving land for its natural, recreational, scenic, historical and productive values.

- Local Agency Formation Commissions

  The Local Agency Formation Commission (LAFCO) is the agency that has the responsibility to create orderly local government boundaries, with the goal of encouraging "planned, well-ordered, efficient urban development patterns," the preservation of open-space lands, and the discouragement of urban sprawl. While LAFCO has no direct land use authority, its actions determine which local government will be responsible for planning new areas. LAFCO addresses a wide range of boundary actions, including creation of spheres of influence for cities, adjustments to boundaries of special districts, annexations, incorporations, detachments of areas from cities, and dissolution of cities.

- General Plans

  The most comprehensive land use planning in the Kern region 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 are 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, community design, and growth management, among others. The cities' and the County's general plans must be consistent with each other. The County's general plan must cover areas not included by city general plans (i.e., unincorporated areas).

- Specific and Master Plans

  A city or the 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.

- 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 a city or county zoning code to be consistent with a jurisdiction's general plan.

Environmental Setting

Kern County is located at the southern end of California's San Joaquin Valley, the richest agricultural area in the world. The County is home to 2.73 million acres of some of the world's most productive farmland. Over 2,000 farmers grow more than 110 different crops, contributing just less than $2.1 billion a year to the California economy. A number of crops are not grown commercially anywhere else in the nation. Additional statistics include the following:

- Number of farms –2,117 (USDA Census of Agriculture, 2007);
- Harvested cropland – over 878,538 acres (County of Kern Department of Agriculture, 2008 Crop Report); and
- Irrigated land – 786,225 acres (USDA Census of Agriculture, 2007).

Despite the low precipitation in the area, and the County's dependence upon the availability of irrigation water, agriculture remains one of the primary industries in the County, with much of the level and moderately sloping land used for the production of agricultural crops. The foothills and mountain areas are used for livestock grazing. In the rolling hills northeast of Bakersfield, oil production is dominate. Tehachapi is known for its apples, berries, pumpkins, lilac, and other mild temperature crops. Leading crops grown on the Valley floor area within the County include grapes, almonds, milk, citrus, cotton, carrots, pistachios, hay, and potatoes.

Williamson Act Lands

Kern County currently contains over 1.7 million acres of prime and nonprime agricultural land under Williamson Act preserve status. Prime agricultural land is defined as those lands containing the best combination of physical and chemical characteristics for the production of crops. Table 3-1 illustrates the type and amount of agricultural land within the County.

TABLE 3-1
Lands Enrolled in Williamson Act Preserve, 2007

		Acres
Land Conservation Act	Prime	628,962
	Non-prime	919,117
Farmland Security Zone	Urban Prime	25,176
	Non-urban Prime	133,751
Total		1,708,473

Source: Division of Land Resource Protection, Williamson Act Status Report2008,

The County of Kern Planning Department has Williamson Act files for each contract in force. The files are incorporated by reference.

Environmental Impacts, Mitigation Measures, and Significance After Mitigation

Criteria for Significance

Substantial loss of agricultural, open space, or other resource land.

Impact 3.2.1

Strategies aimed at addressing the transportation needs of future growth patterns were considered during development of the proposed RTP. The document promotes alternatives to the automobile through enhanced funding for transit and other alternative modes of transportation such as bicycle facilities, trails, airport improvements, and others. Implementation of strategies proposed in the RTP could result in positive changes to land uses. This would be considered a beneficial impact.

Implementation of transit improvements included in the Plan could influence land use patterns throughout the region. Land use and transportation policies are emphasized in the RTP in order to address automobile traffic and air quality concerns. Growth patterns that promote alternatives to the automobile by creating mixed-use developments, which would include residences, shops, parks, and civic institutions, linked to pedestrian-and-bicycle friendly public transportation centers, are also discussed in the 2011 RTP. Design features, such as improved street connectivity, public amenities, and a concentration of residences and jobs in proximity to transit routes could be incorporated into mixed-use developments; therefore, addressing automobile traffic and air quality concerns. Implementation of enhanced alternative modes as provided by the RTP could result in more balanced land use conditions throughout the region, as the mixed-use developments would result in a concentration of jobs and residences in close proximity to one another.

While the RTP is likely to result in a positive outcome related to supportive land use conditions for alternative forms of transportation such as transit, other projects in the Plan could have significant impacts on land use patterns, potentially causing land use growth and development to occur in areas not previously envisioned for growth and development. This impact could be especially significant on agricultural land uses within the County.

Mitigation Measures

The impact on significant agricultural resources will be evaluated as part of the appropriate improvement project-specific environmental review. Mitigation measures will be identified to minimize impacts. Implementation agencies will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with all mitigation measures.

- Individual projects will be consistent with local land use plans and policies that designate areas for urban land use and preserve agricultural lands that support the economic viability of agricultural activities; and

- Prior to final approval of each individual improvement project, the implementing agency will conduct the appropriate project-specific environmental review, including consideration of potential land use impacts.

Significance After Mitigation

While implementation and monitoring of the above mitigation measures will provide the framework and direction for subsequent project-specific mitigation designed to avoid or reduce the identified significant Project impacts, it is probable that such impacts will remain significant and unavoidable.

Impact 3.2.2

Implementation of the proposed Project could potentially result in the disturbance or loss of significant agricultural resources throughout the Kern region. This would be considered a potentially significant impact.

The Kern region contains areas designated by the state as Prime Farmland, Unique Farmland, and Farmland of Statewide Importance. These areas are interspersed throughout urban areas or are located in undeveloped portions of the region.

Development of proposed projects could potentially result in the disturbance or loss of some of these designated areas. Specifically, new projects involving construction would be most likely to result in impacts to these areas.

Mitigation Measures

The impact on significant agricultural resources will be evaluated as part of the appropriate project-specific environmental review. Mitigation measures will be identified to minimize impacts. Implementation agencies will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with all mitigation measures.

- Individual projects will be consistent with federal, state, and local policies that preserve agricultural lands and support the economic viability of agricultural activities, as well as policies that provide compensation for property owners if preservation is not feasible;

- For projects in agricultural areas, implementation agencies will contact the California Department of Conservation and the Agricultural Commissioner's office to identify the location of prime farmlands and lands that support crops considered valuable to the local or regional economy;

- Prior to final approval of each individual improvement project, the implementing agency will establish conservation easement programs to mitigate impacts to prime farmland;

- Prior to final approval of each individual improvement project, the implementing agency will avoid impacts to prime farmlands or farmlands that support crops considered valuable to the local or regional economy; and

- Prior to final approval of each individual improvement project, the implementing agency will encourage enrollments of agricultural lands for counties that have Williamson Act programs.

Significance After Mitigation

Implementation and monitoring of the above mitigation measures will provide the framework and direction for subsequent individual improvement project-specific mitigation designed to avoid or reduce the identified significant Project impacts to a less than significant level.

3.3 AIR QUALITY

Kern County is located in one of the most polluted air basins in the country – the San Joaquin Valley Air Basin. The eastern half of the County is also located in the Mojave Air Basin. The surrounding topography includes foothills and mountains to the east, west, and south. These mountain ranges direct air circulation and dispersion patterns. Temperature inversions can trap air within the Valley, thereby preventing the vertical dispersal of air pollutants. In addition to topographic conditions, the local climate can also contribute to air quality problems. Climate in Kern County is classified as Mediterranean, with moist cool winters and dry warm summers.

Ozone, classified as a "regional" pollutant, often afflicts areas downwind of the original source of precursor emissions. Ozone can be easily transported by winds from a source area. Peak ozone levels tend to be higher in the southern portion of the Valley, as the prevailing summer winds sweep precursors downwind of northern source areas before concentrations peak. The separate designations reflect the fact that ozone precursor transport depends on daily meteorological conditions.

Other primary pollutants, CO, for example, may form high concentrations when wind speed is low. During the winter, Bakersfield experiences cold temperatures and calm conditions that increase the likelihood of a climate conducive to high CO concentrations.

Surface radiant cooling can also cause temperature inversions. On clear winter nights, the ground loses heat at a rapid rate, causing air in contact with it to cool. Once formed, radiation inversions are similar to subsidence inversions with respect to their effects on pollutant dilution. As a result, conditions in Kern County are conducive to the containment of air pollutants.

Regulatory

Air quality in the County is addressed through the efforts of various federal, state, regional, and local government agencies. These agencies work jointly, as well as individually, to improve air quality through legislation, regulations, planning, policy-making, education, and a variety of programs. The agencies primarily responsible for improving the air quality within Kern County are discussed below, along with their individual responsibilities.

Federal Regulations

- National Environmental Policy Act (NEPA)

  The National Environmental Policy Act (NEPA) provides general information on the effects of federally funded projects. The act was implemented by regulations included in the Code of Federal Regulations (40CFR6). The code requires careful consideration concerning environmental impacts of federal actions or plans, including projects that receive federal funds. The regulations address impacts on land uses and conflicts with state, regional, or local plans and policies, among others. They also require that projects requiring NEPA review seek to avoid or minimize adverse effects of proposed actions and to restore and enhance environmental quality as much as possible.

Federal Agencies

- U.S. Environmental Protection Agency (EPA)

  The federal Clean Air Bill, first adopted in 1967 and periodically amended since then, established federal ambient air quality standards. A 1987 amendment to the Bill set a deadline for the attainment of these

standards. That deadline has since passed. The Other federal Clean Air Bill Amendments, passed in 1990, share responsibility with the state in reducing emissions from mobile sources. The U.S. Environmental Protection Agency (U.S. EPA) is responsible for enforcing the 1990 amendments.

The Federal Clean Air Act (CAA) and the national ambient air quality standards identify levels of air quality for six "criteria" pollutants, which are considered the maximum levels of ambient air pollutants considered safe, with an adequate margin of safety, to protect public health and welfare. The six criteria pollutants include ozone, CO, nitrogen dioxide, sulfur dioxide, particulate matter 10 microns in size and smaller (PM_{10}), and lead.

The U.S. EPA requires each state to prepare and submit a State Implementation Plan (SIP) that describes how the state will achieve the federal standards by the specified dates, depending on the severity of the air quality within the state or basin. Based on the provisions contained in the 1990 amendment, EPA designated the entire San Joaquin Valley as nonattainment for two pollutants: ozone and particle matter less than 10 microns in size or PM_{10}.

More recently, on April 24, 2004, the EPA reclassified the San Joaquin Valley ozone nonattainment area from its previous severe status to "extreme" at the request of the SJVAPCD Board. Kern County is considered to be in non-attainment of ozone and $PM_{2.5}$ standards and attainment for PM_{10} standards.

State Regulations

- California Environmental Quality Act (CEQA)

CEQA defines a significant impact on the environment as a substantial, or potentially substantial, adverse change in the physical conditions within the area affected by the project. Land use is a required impact assessment category under CEQA. CEQA documents generally evaluate land use in terms of compatibility with the existing land uses and consistency with local general plans and other local land use controls (zoning, specific plans, etc).

State Agencies

- California Air Resources Board (ARB)

In 1988, the State of California passed the California Clean Air Act (CCAA, State 1988 Statutes, Chapter 1568) that established more stringent state ambient air quality standards, and set forth a program for their achievement. State air basins are established by the California Air Resources Board (CARB). CARB implements state ambient air quality standards, as required in the State CCAA, and cooperate with the federal government in implementing pertinent sections of the federal Clean Air Bill, Amendments. Further, CARB has responsibility for controlling stationary and mobile source air pollutant emissions throughout the state.

Kern County is in the CARB-designated, SJVAB. A map of the SJVAB is provided in Figure 3-3. In addition to Kern County, the SJVAB includes Fresno, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare Counties.

Applicable federal and state standards are provided in Table 3-2.

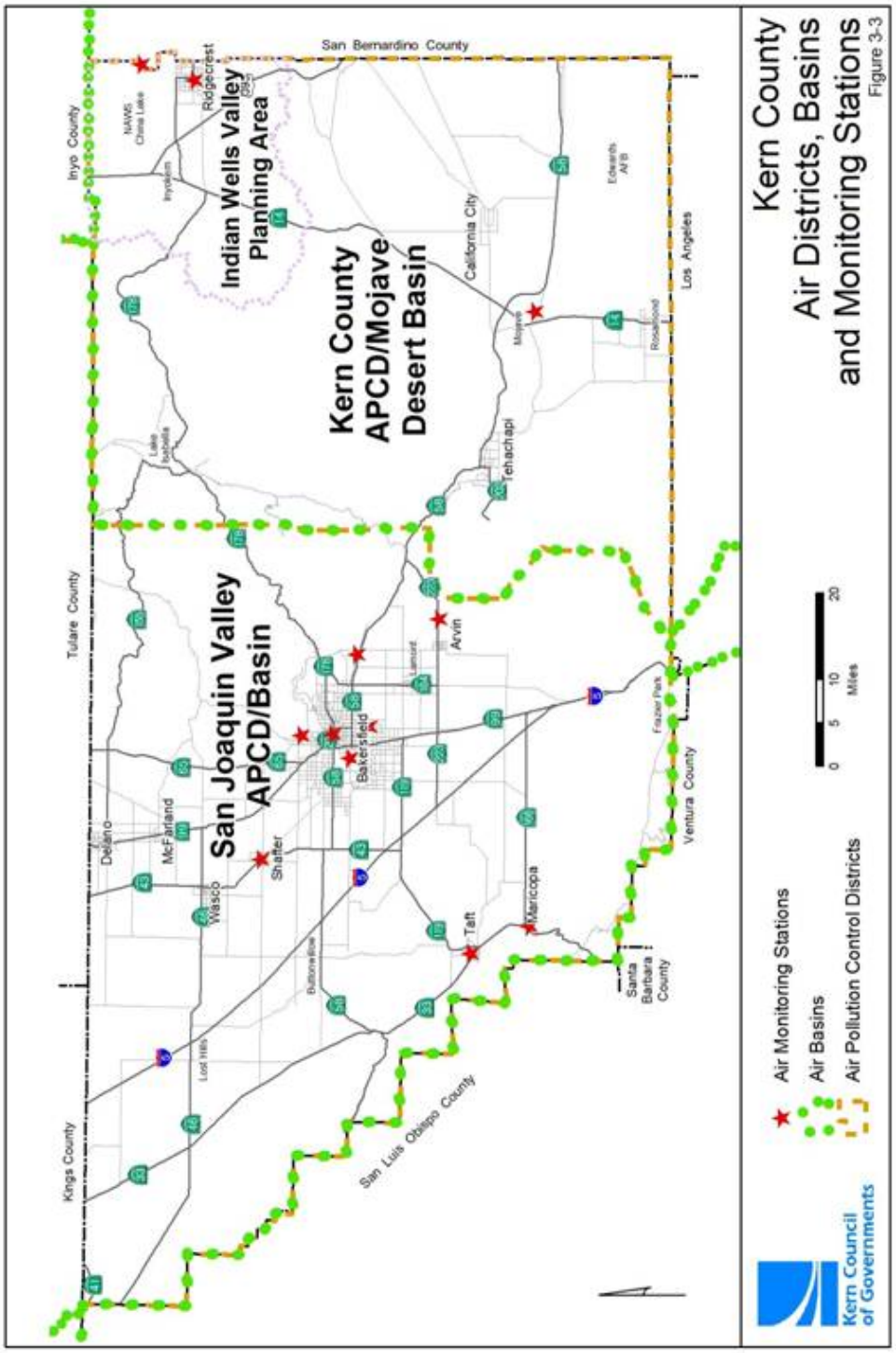

Kern County
Air Districts, Basins
and Monitoring Stations
Figure 3-3
San Bernardino County
Inyo County
Tulare County
Kings County
San Luis Obispo County
Santa Barbara County
Ventura County
Los Angeles
Indian Wells Valley
Planning Area
Kern County
APCD/Mojave
Desert Basin
San Joaquin Valley
APCD/Basin
Ridgecrest
NAWS
China Lake
Inyokern
California City
Edwards
AFB
Mojave
Rosamond
Lake Isabella
Tehachapi
Arvin
Lamont
Bakersfield
Frazier Park
Delano
McFarland
Wasco
Shafter
Buttonwillow
Lost Hills
Taft
Maricopa
0 5 10 20
Miles
Air Monitoring Stations
Air Basins
Air Pollution Control Districts
Kern Council
of Governments

TABLE 3-2

Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards [1]		Federal Standards [2]		
		Concentration [3]	Method [4]	Primary [3,5]	Secondary [3,6]	Method [7]
Ozone (O_3)	1 Hour	0.09 ppm (180 µg/m³)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m³)		0.075 ppm (147 µg/m³)		
Respirable Particulate Matter (PM10)	24 Hour	50 µg/m³	Gravimetric or Beta Attenuation	150 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m³		—		
Fine Particulate Matter (PM2.5)	24 Hour	No Separate State Standard		35 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m³	Gravimetric or Beta Attenuation	15.0 µg/m³		
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10mg/m³)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m³)	None	Non-Dispersive Infrared Photometry (NDIR)
	1 Hour	20 ppm (23 mg/m³)		35 ppm (40 mg/m³)		
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m³)		—	—	—
Nitrogen Dioxide (NO_2)[8]	Annual Arithmetic Mean	0.030 ppm (57 µg/m3)	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m³)	Same as Primary Standard	Gas Phase Chemiluminescence
	1 Hour	0.18 ppm (339 µg/m³)		0.100 ppm	0.053 ppm (100 µg/m³)	
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	—	Ultraviolet Fluorescence	0.030 ppm (80 µg/m³)	—	Spectrophotometry (Pararosaniline Method)
	24 Hour	0.04 ppm (105 µg/m³)		0.14 ppm (365 µg/m³)	—	
	3 Hour	—		—	0.5 ppm (1300 µg/m³)	
	1 Hour	0.25 ppm (655 µg/m³)		—	—	—
Lead[9]	30 Day Average	1.5 µg/m³	Atomic Absorption	—	—	—
	Calendar Quarter	—		1.5 µg/m³	Same as Primary Standard	High Volume Sampler and Atomic Absorption
	Rolling 3-Month Average[10]	—		0.15 µg/m³		
Visibility Reducing Particles	8 Hour	Extinction coefficient of 0.23 per kilometer — visibility of ten miles or more (0.07 — 30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape.		No Federal Standards		
Sulfates	24 Hour	25 µg/m³	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m³)	Ultraviolet Fluorescence			
Vinyl Chloride[9]	24 Hour	0.01 ppm (26 µg/m³)	Gas Chromatography			

See footnotes on next page ...

For more information please call ARB-PIO at (916) 322-2990 — California Air Resources Board (01/27/10)

Footnotes:
1.California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter—PM10, PM2.5, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
2. National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m3 is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact U.S. EPA for further clarification and current federal policies.
3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
4. Any equivalent procedure which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.
5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
7. Reference method as described by the EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the EPA.
8. To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010).
9. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
10. National lead standard, rolling 3-month average: final rule signed October 15, 2008

.Source: California Air Resources Board (05/17/06)

Regional Agencies

- San Joaquin Valley Air Pollution Control District

The District is the agency responsible for monitoring and regulating air pollutant emissions from stationary, area, and indirect sources within Kern County and throughout the SJVAB. The District also has responsibility for monitoring air quality and setting and enforcing limits for source emissions. CARB is the agency with the legal responsibility for regulating mobile source emissions. The District is precluded from such activities under state law.

The District was formed in mid-1991 and prepared and adopted the San Joaquin Valley Air Quality Attainment Plan (AQAP), dated January 30, 1992, in response to the requirements of the State CCAA. The CCAA requires each non-attainment district to reduce pertinent air contaminants by at least five percent (5%) per year until new, more stringent, 1988 state air quality standards are met. Air quality-monitoring sites located throughout Kern County are shown in Figure 3-3.

Tables 3-3 and 3-4 contain the ambient air quality classifications for a monitoring site in Bakersfield and a site in the rural area of the SJVAB. Table 3-5 identifies the District's attainment status. As indicated, the SJVAB is nonattainment for Ozone (1 hour and 8 hour) and PM (10 microns and 2.5 microns in size).

TABLE 3-3
Maximum Pollutant Levels at Bakersfield's 5558 California Monitoring Station

Pollutant	Time Averaging	2006 Maximums	2007 Maximums	2008 Maximums	Standards National	Standards State
Ozone (O_3)	1 hour	0.123 ppm	0.117 ppm	0.127 ppm	-	0.09 ppm
Ozone (O_3)	8 hour	0.110 ppm	0.106 ppm	0.111 ppm	0.08 ppm	-
Carbon Monoxide (CO)[a]	8 hour	2.19 ppm	1.97 ppm	2.17 ppm	9.0 ppm	9.0 ppm
Nitrogen Dioxide (NO_2)	1 hour	0.073 ppm	0.072 ppm	0.083 ppm	-	.025 ppm
Nitrogen Dioxide (NO_2)	Annual Average	0.017 ppm	0.017 ppm	0.016 ppm	0.053 ppm	-
Particulates (PM_{10})	24 hour	153 mg/m^3	115 mg/m^3	262.3 mg/m^3	150 mg/m^3	50 mg/m^3
Particulates (PM_{10})	Federal Annual Arithmetic Mean	48.9 mg/m^3	45.6 mg/m^3	53.6 mg/m^3	50 mg/m^3	20 mg/m^3
Particulates ($PM_{2.5}$)	24 hour	77.7 mg/m^3	85.8 mg/m^3	99.3 mg/m^3	65 mg/m^3	-
Particulates ($PM_{2.5}$)	Federal Annual Arithmetic Mean	18.7 mg/m^3	21.9 mg/m^3	21.9 mg/m^3	15 mg/m^3	12 mg/m^3

a. Bakersfield's Golden State Highway Monitoring Station
Source: CARB Website, 2010

TABLE 3-4
Maximum Pollutant Levels at Maricopa's Stanislaus Monitoring Station

Pollutant	Time Averaging	2006 Maximums	2007 Maximums	2008 Maximums	Standards National	Standards State
Ozone (O_3)	1 hour	0.123 ppm	0.117 ppm	0.127 ppm	-	0.09 ppm
Ozone (O_3)	8 hour	0.110 ppm	0.106 ppm	0.111 ppm	0.08 ppm	-
Carbon Monoxide (CO)[a]	8 hour	2.19 ppm	1.97 ppm	2.17 ppm	9.0 ppm	9.0 ppm
Nitrogen Dioxide (NO_2)[b]	1 hour	0.073 ppm	0.072 ppm	0.083 ppm	-	.025 ppm
Nitrogen Dioxide (NO_2)[b]	Annual Average	0.017 ppm	0.017 ppm	0.016 ppm	0.053 ppm	-
Particulates (PM_{10})[b]	24 hour	153 mg/m^3	115 mg/m^3	262.3 mg/m^3	150 mg/m^3	50 mg/m^3
Particulates (PM_{10})[b]	Federal Annual Arithmetic Mean	48.9 mg/m^3	45.6 mg/m^3	53.6 mg/m^3	50 mg/m^3	20 mg/m^3
Particulates ($PM_{2.5}$)[b]	24 hour	77.7 mg/m^3	85.8 mg/m^3	99.3 mg/m^3	65 mg/m^3	-
Particulates ($PM_{2.5}$)[b]	Federal Annual Arithmetic Mean	18.7 mg/m^3	21.9 mg/m^3	21.9 mg/m^3	15 mg/m^3	12 mg/m^3

a. Bakersfield's Golden State Highway Monitoring Station
b. Bakersfield's 5558 California Monitoring Station
Source: CARB Website, 2010

TABLE 3-5
San Joaquin Valley Air Basin – District Attainment Status

Pollutant	Designation/Classification	
	Federal Standards	State Standards
Ozone- 1 Hour	No Federal Standard	Non-attainment/Severe
Ozone - 8 Hour	Non-attainment	No State Standard
PM_{10}	Attainment	Non-attainment
$PM_{2.5}$	Non-attainment	Non-attainment
Carbon Monoxide	Unclassified/Attainment	Attainment
Nitrogen Dioxide	Unclassified/Attainment	Attainment
Sulfur Dioxide	Unclassified	Attainment
Lead Particulates	No Federal Standard	Attainment

Source: CARB
Notes:
National Designation Categories

Non-Attainment Area: Any area that does not meet (or that contributes to ambient air quality in a nearby area that does not meet) the national primary or secondary ambient air quality standard for the pollutant.

Unclassified/Attainment Area: Any area that cannot be classified on the basis of available information as meeting or not meeting the national primary or secondary ambient air quality standard for the pollutant or meets the national primary or secondary ambient air quality standard for the pollutant.

State Designation Categories

Unclassified: A pollutant is designated unclassified if the data are incomplete and do not support a designation of attainment or non-attainment.

Attainment: A pollutant is designated attainment if the State standard for that pollutant was not violated at any site in the area during a three-year period.

Non-attainment: A pollutant is designated non-attainment if there was at least one violation of a State standard for that pollutant in the area.

Non-Attainment/Transitional: A subcategory of the non-attainment designation. An area is designated non-attainment/transitional to signify that the area is close to attaining the standard for the pollutant.

- Kern County Air Pollution Control District (KCAPCD)

The KCAPCD is the agency responsible for monitoring and regulating air pollutant emissions from stationary, area, and indirect sources within eastern Kern County within the Mojave Air Basin. The KCAPCD also has responsibility for monitoring air quality and setting and enforcing limits for source emissions. CARB is the agency with the legal responsibility for regulating mobile source emissions. The KCAPCD is precluded from such activities under state law. Air quality-monitoring sites located throughout Kern County are shown in Figure 3-3.

Table 3-6 contains the ambient air quality classifications for a monitoring site in the rural area of the Mojave Air Basin. Table 3-7 identifies the KCAPCD's attainment status.

TABLE 3-6
Maximum Pollutant Levels at Mojave's 923 Poole Street Monitoring Station

Pollutant	Time Averaging	2006 Maximums	2007 Maximums	2008 Maximums	Standards National	Standards State
Ozone (O_3)	1 hour	0.109 ppm	0.092 ppm	0.112 ppm	-	0.09 ppm
Ozone (O_3)	8 hour	0.101 ppm	0.084 ppm	0.102 ppm	0.08 ppm	-
Carbon Monoxide (CO)[a]	8 hour	1.60 ppm	1.25 ppm	1.04 ppm	9.0 ppm	9.0 ppm
Nitrogen Dioxide (NO_2)[a]	1 hour	0.066 ppm	0.064 ppm	0.062 ppm	-	.025 ppm
Nitrogen Dioxide (NO_2)[a]	Annual Average	0.015 ppm	0.015 ppm	0.013 ppm	0.053 ppm	-
Particulates (PM_{10})	24 hour	65 mg/m^3	73 mg/m^3	154 mg/m^3	150 mg/m^3	50 mg/m^3
Particulates (PM_{10})	Federal Annual Arithmetic Mean	21.4 mg/m^3	22.1 mg/m^3	24.4 mg/m^3	50 mg/m^3	20 mg/m^3
Particulates ($PM_{2.5}$)	24 hour	21.3 mg/m^3	21.1 mg/m^3	19.1 mg/m^3	65 mg/m^3	-
Particulates ($PM_{2.5}$)	Federal Annual Arithmetic Mean	--	6.1 mg/m^3	6.8 mg/m^3	15 mg/m^3	12 mg/m^3

a. Lancaster's 43301 Division Street Monitoring Station
Source: CARB Website, 2010

TABLE 3-7
Mojave Air Basin – District Attainment Status

Pollutant	Designation/Classification: National Ambient Air Quality Standards (NAAQS) KCAPCD	Kern River / Cummings Valleys [1,2]	Indian Wells Valley [3,4,5]	State Ambient Air Quality Standards
Ozone - 1 Hour	Attainment [6,7]	Part of KCAPCD Area	Part of KCAPCD Area	Moderate Nonattainment
Ozone - 8 Hour (0.08 ppm)	Nonattainment	Part of KCAPCD Area	Unclassfied/Attainment	Nonattainment
PM10	Unclassifiable/Attainment	Serious Nonattainment	Attainment Maintenance	Nonattainment
PM2.5	Unclassifiable/Attainment	Part of KCAPCD Area	Part of KCAPCD Area	Unclassified
Carbon Monoxide	Unclassifiable/Attainment	Part of KCAPCD Area	Part of KCAPCD Area	Unclassified
Nitrogen Dioxide	Unclassified	Part of KCAPCD Area	Part of KCAPCD Area	Attainment
Sulfur Dioxide	Unclassified	Part of KCAPCD Area	Part of KCAPCD Area	Attainment
Lead Particulates	No Designation	Part of KCAPCD Area	Part of KCAPCD Area	Attainment

1. Kern River Valley, Bear Valley, and Cummings Valley were previously included in the federally designated San Joaquin Valley PM10 Serious Nonattainment Area, but was made a separate nonattainment area in 2008
2. Kern River Valley, Bear Valley, and Cummings Valley are included with the KCAPCD for all NAAQS other than PM10
3. For PM10 and first 8-hour ozne NAAQS(0.08 ppm) the Indian Wells Valley was split-out as a separate planning area from the rest of the KCAPCD
4. Indian Wells Valley is only a separate area for the PM10 and first 8-hour Ozone NAAQS (0.08 ppm) and is part of the KCAPCD for all other NAAQS
5. Indian Wells Valley is included with the rest of the KCAPCD in the proposed designated nonattainment area under the 2007 revision of the 8-Ozone NAAQS (0.075 ppm)
6. 1-hour ozone NAAQS was revoked effective June 15, 2004
7. KCAPCD was attainment of 1-hour ozone NAAQS at time of revocation; the proposed Attainment Maintenance designation's effective date was June 21, 2004, therefore it did not become effective

For determining whether an area is in attainment of the PM_{10} and eight-hour ozone National Ambient Air Quality Standards (NAAQS), the Indian Wells Valley has been considered a separate area from the rest of the KCAPCD and Mojave Air Basin. The Kern River Valley and the western part of the Tehachapi Region were originally part of the SJVAB and the SJVAPCD. The ARB modified the air basins in 1995 when it moved these areas into the Mojave Air Basin and gave the KCAPCD jurisdiction. Since that time, EPA has followed the new air basin boundaries when classifying or designating areas for ozone or PM2.5, with the exception of the aforementioned Indian Wells Valley. However, there is one part of the KCAPCD, which retains a designation

from prior to the 1995 boundary change. The PM_{10} Serious Nonattainment Area for the San Joaquin Valley, which was designated moderate in 1991 and reclassified to serious in 1993, still includes the Kern River Valley and western half of the Tehachapi Region (Stallion Springs, Cummings Valley and Bear Valley).

Local Controls

- *Local Control Mechanisms*

  - *General Plans:* The most comprehensive land use planning for the Kern region is provided by city and county general plans, which local governments are required by state law to prepare as a guide for future development. The general plan contains goals and policies concerning topics that are mandated by state law and others, which the jurisdiction may have chosen to include. Required topics are land use, circulation, housing, conservation, open space, noise, and safety. Local governments frequently choose to address other topics, including public facilities, parks and recreation, community design, and growth management, among others. City and county general plans must be consistent with each other and County general plans must cover areas not included by city general plans (e.g., unincorporated areas).

  - *Specific and Master Plans:* Specific or Master Plans are sometimes developed by a city or county to address smaller, more specific areas within its jurisdiction. These more localized plans provide for focused guidance for developing a specific area and contain development standards tailored to the area, as well as systematic implementation of the general plan.

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

  - *Transportation Control Measures*: Transportation Demand Management (TDM) is the application of strategies and policies to reduce travel demand of single-occupancy, fossil-fueled private vehicles or redistribute the demand in space or in time. TDM emphasizes the movement of people and goods, rather than the movement of motor vehicles. TDM gives priority to more efficient methods of travel such as walking, bicycling, ridesharing, public transportation and telecommuting especially under congested conditions. TDM prioritizes travel based on the value and costs of each trip, giving higher value trips and lower cost modes priority over lover value, higher cost travel thereby increasing overall system efficiency. Managing transportation demand can be a cost-effective alternative to increasing capacity. A demand management approach to transportation can also deliver better environmental outcomes, improve public health, create stronger communities which are more prosperous and livable. TDM supports community movements for sustainable transportation.

    There are many different TDM strategies with a variety of impacts. Some improve the transportation options available to consumers. Some provide incentives to change trip scheduling, route, mode or destination. Others reduce the need for physical travel through more efficient land use or transportation substitutes. Although most individual TDM strategies only affect a small portion of total travel, the cumulative impacts of a comprehensive TDM program can be significant. When all benefits and costs are considered, TDM programs are often the most cost effective way to improve transportation. The value of TDM is further enhanced by the following trends:

- *Rising facility costs.* The costs of expanding highways and parking facilities are increasing. In many cases it is more cost effective to manage demand than to continue to expand supply;
- *Increased urbanization.* In most developed countries the majority of people and jobs are located in urban areas, where traffic and parking problems are significant and alternative modes are cost effective;
- *Demographics.* The population is aging, increasing the importance of providing quality travel options for non-drivers'
- *Energy Costs.* Vehicle fuel costs are projected to increase in the future due to depletion of oil supplies and environmental constraints;
- *Consumer preferences and market trends.* Many consumers want to live in more multi-modal communities where it is possible to walk and bicycle safely, use neighborhood services, and have access to quality public transportation; and
- *Environmental concerns.* Concerns over air pollution, sprawl and other environmental impacts are motivating policy changes to encourage more efficient transportation.

When all impacts are considered, TDM I soften the most cost effective solution to transportation problems. TDM can provide multiple benefits, including reduced congestion, road and parking facility cost savings, crash cost savings, consumer cost savings, pollution reduction, and more efficient land use. TDM greatly expands the range of solutions that can be considered for addressing transportation problems, and allows solutions to be tailored to a particular situation. TDM can often be implemented quickly, and target a particular location, time period or user group.

TDM helps correct current transportation and land use market distortions by increasing consumer choice, encouraging competition, making prices more accurately reflect costs, and creating more neutral planning and tax policies. In this way, TCM can support economic development by increasing productivity, reducing external costs and shifting consumer expenditures toward goods that provide greater employment and business activity.

The following TDM strategies will be considered for implementation:

- Employer-Based Commute Trip Reduction:
  - Encourage telecommuting and alternative work schedules;
  - Implement and coordinate use of employee vehicle sharing programs and alternative modes; and
  - Improve employer parking management (e.g. employee parking "cash out", unbundling parking cost from property cost.

- Fuel Tax:
  - Fuel tax/carbon price.

- Other Trip Reduction (Commute and Other):
  - Implement vehicle sharing programs (e.g. car sharing, bike sharing, park and ride lots).

- Parking Management:
  - Implement effective pricing; and
  - Implement metered pricing.

- Road User Pricing:
  - Implement distance-based (VMT) pricing.

- Transit Service:
  - Adopt competitive fare structure.

➢ *Transportation System Management (TSM)* – Transportation Systems Management (TSM) is a strategy aimed at improving the overall performance of the transportation network without resorting to large-scale, expensive capital improvements. TSM integrates techniques from across disciplines to increase safety, efficiency and capacity for all modes in the transportation system. Activities that increase the efficiency of the existing transportation system without adding new travel lanes, thus reducing the amount of energy required to make the system function, such as traffic signalization, ramp metering, truck auxiliary lanes on major inclines, intersection turning lanes, railroad grade separations, and replacing four-way stop signs with traffic signals.

The Transportation Systems Management (TSM) approach to congestion mitigation seeks to identify improvements to enhance the capacity of existing system of an operational nature. Through better management and operation of existing transportation facilities, these techniques are designed to improve traffic flow, air quality, and movement of vehicles and goods, as well as enhance system accessibility and safety.

Transportation systems management strategies are low-cost but effective in nature, which include, but are not limited to:

- Intersection and signal improvements;
- Freeway bottleneck removal programs;
- Data collection to monitor system performance;
- Special events management strategies;
- Traffic signal and intersection improvements include such elements as:
  - Signal timing optimization;
  - Controller/cabinet and signal head upgrades;
  - Vehicle detectors repair/replacement; and
  - Communication with a central system.
- Turning lanes;
- Grade separations;
- Pavement striping;
- Lane assignment changes;
- Signage and lighting; and
- Freeway and arterial bottleneck removal consists of identifying congested locations and improving such elements as:
  - Insufficient acceleration/deceleration lanes and ramps;
  - Weaving sections;
  - Sharp horizontal/vertical curves;
  - Narrow lanes and shoulders;
  - Inadequate signage and pavement striping; and
  - Other geometric deficiencies.

The identification and elimination of traffic bottlenecks can greatly improve traveling conditions and enhance system capacity, reliability, and safety, especially during peak periods. TSM projects can complement the major capacity improvements and infrastructure by providing improved traffic flow on arterials and local streets.

The following TDM strategies will be considered for implementation:

- Interconnectivity Among Alternative Modes:
  - Improve linkages between modes of travel; and
  - Use Intelligent Transportation System technologies (e.g. "smart card").

- Parking Management:
  - Alter parking requirements and types of supply (e.g. maximum parking, shared parking); and
  - Improve efficiency through information (e.g. signs).

- Road User Pricing:
  - Implement congestion pricing;
  - Implement High Occupancy Toll (HOT) Lanes; and
  - Implement area or cordon pricing.

- Service:
  - Implement congestion management strategies (e.g. congestion pricing); and
  - Use other transportation system management strategies.

- Transit Service:
  - Reduce passenger travel time (e.g. fewer stops, express service, traffic signal priority, etc.).

TDMs and TSMs also benefit mobility and congestion relief by reducing demand and maintaining system efficiency, thereby delaying the need for capacity increasing highway projects.

➢ *Awareness and Incentives to assist with TDM and TSM implementation:*

- Public Participation in Planning:
  - Implement public process for discussion of planning decisions (e.g. forums); and
  - Ensure transparency in decision making and planning process.

- Awareness Programs:
  - Introduce awareness programs on the benefits of land use, transportation and pricing policies.

- Incentives:
  - Provide financial incentives (e.g. grants, tax credits);
  - Provide regulatory relief (e.g. density bonuses, expedited processing); and
  - Provide recognition programs.

The County of Kern and its eleven (11) incorporated cities, private business, and government offices already implement some of these TDM and TSM programs including traffic flow improvements, public transit, park and ride lots, bicycling programs, and alternate work schedules.

Environmental Setting, Impacts, Mitigation Measures, and Significant Effects

This section describes existing air quality within the San Joaquin Valley Air Basin and in Kern County, including the identification of air pollutant standards, meteorological and topological conditions affecting air quality, and current air quality conditions. Air quality is described in relation to ambient air quality standards for criteria pollutants such as, ozone, carbon monoxide, and particulate matter less than 10 microns in size (PM_{10}). A complete description of the current air quality requirements is provided in the latest Air Quality Conformity Findings.

Each of these Conformity documents is incorporated in this EIR by reference. The Conformity Findings provide a review of the current status of air quality planning and implementation, including the status of the current State Implementation Plan (SIP), Rate of Progress (ROP) Plans, and the implementation of various transportation control measures (TCMs) that are committed to in the current SIP and are needed to "offset" nonattainment emission increases associated with the Project.

Geographical Location

Encompassing 24,840 square miles, the San Joaquin Valley is the second largest air basin in California. Cumulatively, counties within the Air Basin represent approximately 16 percent of the state's geographic area. The Air Basin is bordered by the Sierra Nevada Mountains on the east (8,000 to 14,492 feet in elevation), the Coastal Range on the west (4,500 feet in elevation), and the Tehachapi Mountains on the south (9,000 feet elevation). The San Joaquin Valley is open to the north extending to the Sacramento Valley Air Basin.

Topographic Conditions

Kern County is located within the San Joaquin Valley Air Basin [as determined by the California Air Resources Board (CARB)]. Exhibit 3-2 provides a map of the Air Basin. Air basins are geographic areas sharing a common "air shed." A description of the Air Basin in the County, as designated by CARB, is provided below. Air pollution is directly related to the region's topographic features, which impact air movement within the Basin.

Wind patterns within the SJVAB result from marine air that generally flows into the Basin from the San Joaquin River Delta. The Coastal Range hinders wind access into the Valley from the west, the Tehachapi's prevent southerly passage of airflow, and the high Sierra Nevada Mountain Range provides a significant barrier to the east. These topographic features result in weak airflow that becomes restricted vertically by high barometric pressure over the Valley. As a result, the SJVAB is highly susceptible to pollutant accumulation over time. Most of the surrounding mountains are above the normal height of summer inversion layers (1,500-3,000 feet).

Climatic Conditions

In addition to topographic conditions, the local climate can also contribute to air quality problems. Light winds and atmospheric stability provide frequent opportunities for pollutants to accumulate in the atmosphere. Wind speed and direction also play an important role in the dispersion and transport of air pollutants. Wind at the surface and aloft can disperse pollution by mixing vertically and by transporting it to other locations.

Ozone is classified as a "regional" pollutant due in part to the time required for ozone formation. Ozone, however, is not a directly emitted pollutant. Ozone is formed when its precursors, nitrogen oxides (NO_X) and volatile organic compounds (VOC), react in the presence of sunlight. Ozone precursors can be easily transported by winds from a source area before ozone concentrations peak. In addition, temperature and solar radiation are important factors in the chemistry of ozone formation because ozone is formed in a photochemical reaction requiring sunlight. Generally, higher temperatures create greater amounts of ozone, since reaction rates increase with temperature. However, extremely hot temperatures can lift or break the inversion layer.

Localized pollutants, carbon monoxide (CO) for example, may form high concentrations when wind speed is low. Temperature inversions can also be caused by surface radiant cooling. On clear winter nights, the ground loses heat at a rapid rate, causing air in contact with it to cool. Once formed, radiation inversions are similar to subsidence inversions with respect to their effects on pollutant dilution. A description of specific climatic factors in the Air Basin is provided below.

Climate in the San Joaquin Valley is Mediterranean with moist cool winters and dry warm summers. Precipitation is confined primarily to the winter months. The Kern County portion of the SJVAB had an average annual rainfall over a 30-year period of approximately 6 inches on the Valley floor. During summer months, wind speed and direction data indicate that winds usually originate at the north end of the Valley and flow in a southerly direction through the Tehachapi Pass into the Mojave Air Basin. These prevailing winds, known as "up-valley winds", originate with coastal breezes that enter the San Joaquin Valley through breaks in the coastal ranges, particularly though the Carquinez Straits in the San Francisco Bay Area and the Sacramento Valley Area; however, sources of air pollution, including stationary, mobile and area sources within the central and southern portions of the San Joaquin Valley, are considered to be a greater influence under most conditions. Peak ozone levels tend to be higher in the southernmost portion of the San Joaquin Valley, as the prevailing summer winds sweep precursors downwind of northern source areas.

During winter months, wind speed and direction data indicate that wind occasionally originates from the south end of the Valley and flows in a northerly direction. Also during the winter, the San Joaquin Valley experiences light variable winds, less than ten miles per hour (mph). Low wind speeds, combined with low inversion layers during the winter, create a climate conducive to high CO concentrations.

Wind speed and direction also change throughout the day. During the day, northerly winds prevail. However, in the late evening through the early morning, wind flow reverses direction due to the effects of cooler drainage wind from surrounding mountains. The interruption of northerly wind, including the evening and morning transition between the two wind flow patterns, is known as an "eddy". This adds to the complexity of regional wind flow and pollutant transport within the SJVAB.

Other Air Quality Determinants

In addition to climatic conditions (wind, lack of rain, etc.), air pollution can be caused by human/socioeconomic conditions. Air pollution in the SJVAB can be directly attributed to human activities, which cause air pollutant emissions. Human causes of air pollution in the Valley consist of population growth, urbanization (gas-fired appliances, residential wood heaters, etc.), mobile sources (i.e., cars, trucks, airplanes, trains, etc.), oil production, and agriculture. These are called anthropogenic, or human-caused, sources of emissions. The most significant factors, which are accelerating the decline of air quality in the SJVAB, are the Valley's rapid population growth and its associated increases in traffic, urbanization, and industrial activity.

Carbon monoxide emissions overwhelmingly come from mobile sources in the San Joaquin Valley; on-road vehicles contribute 65 percent, while other mobile vehicles, such as trains, planes, and off-road vehicles, contribute another 17 percent. The District is the agency empowered to regulate air pollutant emissions. The District regulates air quality through its permit authority for most types of stationary emission sources and through its planning and review activities for other sources.

Motor vehicles account for significant portions of regional gaseous and particulate emissions. Local large employers such as industrial plants can also generate substantial regional gaseous and particulate emissions. In addition, construction and agricultural activities can generate significant temporary gaseous and particulate emissions (dust, ash, smoke, etc.).

Ozone is the result of a photochemical reaction between Oxides of nitrogen (NO_x) and Reactive Organic Gases (ROG). Mobile sources contribute 64 percent of all NO_x emitted from anthropogenic sources. In addition, mobile sources contribute 53 percent of all the ROG emitted from sources within the San Joaquin Valley.

The principal factors that affect air quality in and around Kern County are:

- The sink effect, climatic subsidence and temperature inversions and low wind speeds;
- Automobile and truck travel; and
- Increases in mobile and stationary pollutants generated by local urban growth.

Automobiles, trucks, buses and other vehicles using hydrocarbon fuels release exhaust products into the air. Each vehicle by itself does not release large quantities; however, when considered as a group, the cumulative effect is significant.

Other sources may not seem to fit into any one of the major categories or they may seem to fit in a number of them. These could include agricultural uses, dirt roads, animal shelters; animal feed lots, chemical plants and industrial waste disposal, which may be a source of dust, odors, or other pollutants. For Kern County, this category includes several agriculturally related activities, such as plowing, harvesting, dusting with herbicides and pesticides and other related activities. Finally, industrial contaminants and their potential to produce various effects depend on the size and type of industry, pollution controls, local topography, and meteorological conditions. Major sources of industrial emissions in Kern County consist of oil and agricultural production and processing operations, wine production, and marketing operations.

Primary PM sources are derived from both human and natural activities. A significant portion of PM sources is generated from a variety of human (anthropogenic) activity. These types of activities include agricultural operations, industrial processes, combustion of wood and fossil fuels, construction and demolition activities, and entrainment of road dust into the air. Natural (nonanthropogenic or biogenic) sources also contribute to the overall PM problem. These include windblown dust and wildfires. Secondary PM sources directly emit air contaminants into the atmosphere that form or help form PM. Hence, these pollutants are considered precursors to PM formation. These secondary pollutants include SOx, NOx, VOCs, and ammonia.

The primary contributors of PM_{10} emissions in the San Joaquin Valley are fugitive windblown dust from "open" fields (38%) and road dust, both paved and unpaved (38%). Farming activities only contribute 14 percent of the PM_{10}.

Air Quality Standards

The Federal Clean Air Act (CAA), first adopted in 1963, and periodically amended since then, established National Ambient Air Quality Standards (NAAQS). A set of 1977 amendments determined a deadline for the attainment of these standards. That deadline has since passed. Other CAA amendments, passed in 1990, share responsibility with the state in reducing emissions from mobile sources.

In 1988, the State of California passed the California Clean Air Act [(CCAA), State 1988 Statutes, Chapter 1568], which set forth a program for achieving more stringent California Ambient Air Quality Standards. The California Air Resources Board (ARB) implements state ambient air quality standards, as required in the CCAA, and cooperates with the federal government in implementing pertinent sections of the CAA Amendments (FCAAA). Further, CARB regulates vehicular emissions throughout the state. The SJVAPCD regulates stationary sources, as well as some mobile sources. Attainment of the more stringent State PM_{10} Air Quality Standards is not currently required.

Both National and California Ambient Air Quality Standards have been established for the following five critical pollutants: nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulates (PM_{10}), carbon monoxide (CO), and ozone (O_3). Ozone pollution is the most conspicuous type of air pollution, and is often characterized by visibility-reducing haze, eye irritation, and high oxidant concentrations (i.e., "smog").

The Air District operates regional air quality monitoring networks that provide information on average concentrations of pollutants for which state or federal agencies have established ambient air quality standards. Descriptions of the six pollutants of importance in Kern County follow.

- Ozone (1-hour and 8-hour)

The most severe air quality problem in the Air Basin is the high level of ozone. Ozone occurs in two layers of the atmosphere. The layer surrounding the earth's surface is the troposphere. Here, ground level, or "bad" ozone, is an air pollutant that damages human health, vegetation, and many common materials. It is a key ingredient of urban smog. The troposphere extends to a level about 10 miles up, where it meets the second layer, the stratosphere. The stratospheric, or "good" ozone layer, extends upward from about 10 to 30 miles and protects life on earth from the sun's harmful ultraviolet rays.

"Bad" ozone is what is known as a photochemical pollutant. It needs reactive organic gases (ROG), NO_x, and sunlight. ROG and NO_x are emitted from various sources throughout Kern County. In order to reduce ozone concentrations, it is necessary to control the emissions of these ozone precursors.

Significant ozone formation generally requires an adequate amount of precursors in the atmosphere and several hours in a stable atmosphere with strong sunlight. High ozone concentrations can form over large regions when emissions from motor vehicles and stationary sources are carried hundreds of miles from their origins.

Ozone is a regional air pollutant. It is generated over a large area and is transported and spread by wind. Ozone, the primary constituent of smog, is the most complex, difficult to control, and pervasive of the criteria pollutants. Unlike other pollutants, ozone is not emitted directly into the air by specific sources. Ozone is created by sunlight acting on other air pollutants (called precursors), specifically NO_x and ROG. Sources of precursor gases to the photochemical reaction that form ozone number in the thousands. Common sources include consumer products, gasoline vapors, chemical solvents, and combustion products of various fuels. Originating from gas stations, motor vehicles, large industrial facilities, and small businesses such as bakeries and dry cleaners, the ozone-forming chemical reactions often take place in another location, catalyzed by sunlight and heat. High ozone concentrations can form over large regions when emissions from motor vehicles and stationary sources are carried hundreds of miles from their origins. Approximately 50 million people lived in counties with air quality levels above the EPA's health-based national air quality standard in 1994. The highest levels of ozone were recorded in Los Angeles, closely followed by the San Joaquin Valley. High levels also persist in other heavily populated areas, including the Texas Gulf Coast and much of the Northeast.

While the ozone in the upper atmosphere absorbs harmful ultraviolet light, ground-level ozone is damaging to the tissues of plants, animals, and humans, as well as to a wide variety of inanimate materials such as plastics, metals, fabrics, rubber, and paints. Societal costs from ozone damage include increased medical costs, the loss of human and animal life, accelerated replacement of industrial equipment, and reduced crop yields.

Health Effects

While ozone in the upper atmosphere protects the earth from harmful ultraviolet radiation, high concentrations of ground-level ozone can adversely affect the human respiratory system. Many respiratory ailments, as well as cardiovascular disease, are aggravated by exposure to high ozone levels. Ozone also damages natural ecosystems, such as: forests and foothill communities; agricultural crops; and some man-made materials, such as rubber, paint, and plastic. High levels of ozone may negatively affect immune systems, making people more susceptible to respiratory illnesses, including bronchitis and pneumonia. Ozone accelerates aging and exacerbates pre-existing asthma and bronchitis and, in cases with high concentrations, can lead to the development of asthma in active children. Active people, both children and adults, appear to be more at risk from ozone exposure than those with a low level of activity. Additionally, the elderly and those with respiratory disease are also considered sensitive populations for ozone.

People who work or play outdoors are at a greater risk for harmful health effects from ozone. Children and adolescents are also at greater risk because they are more likely than adults to spend time engaged in vigorous activities. Research indicates that children under 12 years of age spend nearly twice as much time outdoors daily than adults. Teenagers spend at least twice as much time as adults in active sports and outdoor activities. In addition, children inhale more air per pound of body weight than adults, and they breathe more rapidly than adults. Children are less likely than adults to notice their own symptoms and avoid harmful exposures.

Ozone is a powerful oxidant—it can be compared to household bleach, which can kill living cells (such as germs or human skin cells) upon contact. Ozone can damage the respiratory tract, causing inflammation and irritation, and it can induce symptoms such as coughing, chest tightness, shortness of breath, and worsening of asthmatic symptoms. Ozone in sufficient doses increases the permeability of lung cells, rendering them more susceptible to toxins and microorganisms. Exposure to levels of ozone above the current ambient air quality standard leads to lung inflammation and lung tissue damage and a reduction in the amount of air inhaled into the lungs.

The federal and state standards for Ozone are not being met in the SJVAB, MDAB, or in the KCAPCD.

- Particulate Matter

Particulate matter pollution consists of very small liquid and solid particles that remain suspended in the air for long periods. Some particles are large or concentrated enough to be seen as soot or smoke. Others are so small they can be detected only with an electron microscope. Particulate matter is a mixture of materials that can include smoke, soot, dust, salt, acids, and metals. Particulate matter is emitted from stationary and mobile sources, including diesel trucks and other motor vehicles; power plants; industrial processes; wood-burning stoves and fireplaces; wildfires; dust from roads, construction, landfills, and agriculture; and fugitive windblown dust. PM_{10} refers to particles less than or equal to 10 microns in aerodynamic diameter. $PM_{2.5}$ refers to particles less than or equal to 2.5 microns in aerodynamic diameter and are a subset of PM_{10}. Particulates of concern are those that are 10 microns or less in diameter. These are small enough to be inhaled, pass through the respiratory system and lodge in the lungs, possibly leading to adverse health effects.

In the western United States, there are sources of PM_{10} in both urban and rural areas. Because particles originate from a variety of sources, their chemical and physical compositions vary widely. The composition of PM_{10} and $PM_{2.5}$ can also vary greatly with time, location, the sources of the material and meteorological conditions. Dust, sand, salt spray, metallic and mineral particles, pollen, smoke, mist, and acid fumes are the main components of PM_{10} and $PM_{2.5}$. In addition to those listed previously, secondary particles can also be formed as precipitates from chemical and photochemical reactions of gaseous sulfur dioxide (SO_2) and NO_x in the atmosphere to create sulfates (SO_4) and nitrates NO_3.. Secondary particles are of greatest concern during the winter months where low inversion layers tend to trap the precursors of secondary particulates.

The CARB 2008 PM2.5 Plan builds upon the aggressive emission reduction strategy adopted in the 2007 Ozone Plan and strives to bring the valley into attainment status for the 1997 NAAQS for PM2.5. The 2008 PM2.5 Plan indicates that all planned reductions (from the 2007 Ozone Plan and state controls) plus significant reductions from new measures will be needed to attain the annual standard.

The following new controls considered in the 2008 PM2.5 Plan include

- tighter restrictions on residential wood burning and space heating;
- more stringent limits on PM2.5, SO_2, and NO_x emissions from industrial sources;
- measures to reduce emissions from prescribed burning and agricultural burning; and
- more effective work practices to control PM2.5 in fugitive dust.

The control strategy in this plan would also bring the valley closer to attainment status for the 2006 daily PM2.5 standard. The District presented the draft 2008 PM2.5 Plan to the District Governing Board on April 17, 2008, following a 30-day public comment period. This plan was delivered to the EPA in April 2008.

Health Effects

PM_{10} and $PM_{2.5}$ particles are small enough—about one-seventh the thickness of a human hair, or smaller—to be inhaled and lodged in the deepest parts of the lung where they evade the respiratory system's natural defenses. Health problems begin as the body reacts to these foreign particles. Acute and chronic health effects associated with high particulate levels include the aggravation of chronic respiratory diseases, heart and lung disease, and coughing, bronchitis, and respiratory illnesses in children. Recent mortality studies have shown a statistically significant direct association between mortality and daily concentrations of particulate matter in the air. Non-health-related effects include reduced visibility and soiling of buildings. PM_{10} can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. PM_{10} and $PM_{2.5}$ can aggravate respiratory disease and cause lung damage, cancer, and premature death.

Although particulate matter can cause health problems for everyone, certain people are especially vulnerable to adverse health effects of PM_{10}. These "sensitive populations" include children, the elderly, exercising adults, and those suffering from chronic lung disease such as asthma or bronchitis. Of greatest concern are recent studies that link PM_{10} exposure to the premature death of people who already have heart and lung disease, especially the elderly. Acidic PM_{10} can also damage manmade materials and is a major cause of reduced visibility in many parts of the United States.

The federal standards for PM_{10} are being met in the SJVAB, MDAB, and in the KCAPCD but are not being met for state standards. The federal standards for $PM_{2.5}$ are being met in the KCAPCD , and the federal and state standards for $PM_{2.5}$ are not being met in the SJVAB or in the MDAB .

- Carbon Monoxide (CO)

Carbon monoxide (CO) is emitted by mobile and stationary sources as a result of incomplete combustion of hydrocarbons or other carbon-based fuels. CO is an odorless, colorless, poisonous gas that is highly reactive. CO is a byproduct of motor vehicle exhaust, contributes more than two-thirds of all CO emissions nationwide. In cities, automobile exhaust can cause as much as 95 percent of all CO emissions. These emissions can result in high concentrations of CO, particularly in local areas with heavy traffic congestion. Other sources of CO emissions include industrial processes and fuel combustion in sources such as boilers and incinerators. Despite an overall downward trend in concentrations and emissions of CO, some metropolitan areas still experience high levels of CO.

Health Effects

CO enters the bloodstream and binds more readily to hemoglobin than oxygen, reducing the oxygen-carrying capacity of blood and thus reducing oxygen delivery to organs and tissues. The health threat from CO is most serious for those who suffer from cardiovascular disease. Healthy individuals are also affected but only at higher levels of exposure. At high concentrations, CO can cause heart difficulties in people with chronic diseases and can impair mental abilities. Exposure to elevated CO levels is associated with visual impairment, reduced work capacity, reduced manual dexterity, poor learning ability, difficulty performing complex tasks, and in prolonged, enclosed exposure, death.

The adverse health effects associated with exposure to ambient and indoor concentrations of CO are related to the concentration of carboxyhemoglobin (COHb) in the blood. Health effects observed may include an early onset of cardiovascular disease; behavioral impairment; decreased exercise performance of young, healthy men; reduced birth weight; sudden infant death syndrome (SIDS); and increased daily mortality rate.

Most of the studies evaluating adverse health effects of CO on the central nervous system examine high-level poisoning. Such poisoning results in symptoms ranging from common flu and cold symptoms (shortness of breath on mild exertion, mild headaches, and nausea) to unconsciousness and death.

The federal standards for Carbon Monoxide are being met in the SJVAB, MDAB, and in the KCAPCD.

- Nitrogen Oxides (NO_x)

Nitrogen oxides (NO_x) is a family of highly reactive gases that are primary precursors to the formation of ground-level ozone and react in the atmosphere to form acid rain. NO_x is emitted from combustion processes in which fuel is burned at high temperatures, principally from motor vehicle exhaust and stationary sources such as electric utilities and industrial boilers. A brownish gas, NO_x is a strong oxidizing agent that reacts in the air to form corrosive nitric acid, as well as toxic organic nitrates.

Health Effects

NO_x is an ozone precursor that combines with Reactive Organic Gases (ROG) to form ozone. See the ozone section above for a discussion of the health effects of ozone.

Direct inhalation of NO_x can also cause a wide range of health effects. NO_x can irritate the lungs, cause lung damage, and lower resistance to respiratory infections such as influenza. Short-term exposures (e.g., less than 3 hours) to low levels of nitrogen dioxide (NO_2) may lead to changes in airway responsiveness and lung function in individuals with preexisting respiratory illnesses. These exposures may also increase respiratory illnesses in children. Long-term exposures to NO_2 may lead to increased susceptibility to respiratory infection and may cause irreversible alterations in lung structure. Other health effects associated with NO_x are an increase in the incidence of chronic bronchitis and lung irritation. Chronic exposure to NO_2 may lead to eye and mucus membrane aggravation, along with pulmonary dysfunction. NO_x can cause fading of textile dyes and additives, deterioration of cotton and nylon, and corrosion of metals due to production of particulate nitrates. Airborne NO_x can also impair visibility. NO_x is a major component of acid deposition in California. NO_x may affect both terrestrial and aquatic ecosystems. NO_x in the air is a potentially significant contributor to a number of environmental effects such as acid rain and eutrophication in coastal waters. Eutrophication occurs when a body of water suffers an increase in nutrients that reduce the amount of oxygen in the water, producing an environment that is destructive to fish and other animal life.

NO_2 is toxic to various animals as well as to humans. Its toxicity relates to its ability to combine with water to form nitric acid in the eye, lung, mucus membranes, and skin. Studies of the health impacts of NO_2 include experimental studies on animals, controlled laboratory studies on humans, and observational studies.

In animals, long-term exposure to NO_x increases susceptibility to respiratory infections, lowering their resistance to such diseases as pneumonia and influenza. Laboratory studies show susceptible humans, such as asthmatics, exposed to high concentrations of NO_2, can suffer lung irritation and, potentially, lung damage. Epidemiological studies have also shown associations between NO_2 concentrations and daily mortality from respiratory and cardiovascular causes as well as hospital admissions for respiratory conditions.

NO_x contributes to a wide range of environmental effects both directly and when combined with other precursors in acid rain and ozone. Increased nitrogen inputs to terrestrial and wetland systems can lead to changes in plant species composition and diversity. Similarly, direct nitrogen inputs to aquatic ecosystems such as those found in estuarine and coastal waters can lead to eutrophication as discussed above. Nitrogen, alone or in acid rain, also can acidify soils and surface waters. Acidification of soils causes the loss of essential plant nutrients and increased levels of soluble aluminum, which is toxic to plants. Acidification of surface waters creates conditions of low pH and levels of aluminum that are toxic to fish and other aquatic organisms.

The federal and state standards for Nitrogen Dioxide are being met in the SJVAB, MDAB, and in the KCAPCD.

- Sulfur Dioxide (SO_2)

The major source of sulfur dioxide (SO_2) is the combustion of high-sulfur fuels for electricity generation, petroleum refining and shipping. High concentrations of SO_2 can result in temporary breathing impairment for asthmatic children and adults who are active outdoors. Short-term exposures of asthmatic individuals to elevated SO_2 levels during moderate activity may result in breathing difficulties that can be accompanied by symptoms such as wheezing, chest tightness, or shortness of breath. Other effects that have been associated with longer-term exposures to high concentrations of SO_2, in conjunction with high levels of PM, include aggravation of existing cardiovascular disease, respiratory illness, and alterations in the lungs' defenses. SO_2 also is a major precursor to $PM_{2.5}$, which is a significant health concern and a main contributor to poor visibility. In humid atmospheres, sulfur oxides can react with vapor to produce sulfuric acid, a component of acid rain.

The standards for SO_2 are being met in the MDAB and the KCAPCD does not expect that the standards will be exceeded in the near future.

- Lead (Pb)

Lead, a naturally occurring metal, can be a constituent of air, water, and the biosphere. Lead is neither created nor destroyed in the environment, so it essentially persists forever. Lead was used until recently to increase the octane rating in automobile fuel. Since the 1980s, lead has been phased out in gasoline, reduced in drinking water, reduced in industrial air pollution, and banned or limited in consumer products. Gasoline-powered automobile engines were a major source of airborne lead through the use of leaded fuels; however, the use of leaded fuel has been mostly phased out. Since this has occurred the ambient concentrations of lead have dropped dramatically.

Exposure to lead occurs mainly through inhalation of air and ingestion of lead in food, water, soil, or dust. It accumulates in the blood, bones, and soft tissues and can adversely affect the kidneys, liver, nervous system, and other organs. Excessive exposure to lead may cause neurological impairments such as seizures, mental retardation, and behavioral disorders. Even at low doses, lead exposure is associated with damage to the nervous systems of fetuses and young children.. Effects on the nervous systems of children are one of the primary health risk concerns from lead. In high concentrations, children can even suffer irreversible brain damage and death. Children 6 years old and under are most at risk, because their bodies are growing quickly.

The state standards for lead are being met in the SJVAB, MDAB, and in the KCAPCD.

Existing TCMs and Air Quality Mitigation

Until the passage of the CCAA, the primary role of air districts in California was the control of stationary sources of pollution such as industrial processes and equipment. With the passage of the FCAA and CCAA, air districts were required to implement transportation control measures (TCMs) and were encouraged to adopt indirect source control

programs to reduce mobile source emissions. These mandates created the necessity for the District to work closely with cities and counties and with regional transportation planning agencies (RTPAs) to develop new programs.

A description of the various TCMs that have been incorporated into the Air District AQAP, ROP Plans, and the SJVAPCD TCM Program, or have been identified as necessary to provide for positive air quality conformity findings, is included in the latest Air Quality Conformity Findings for the 2011 RTP and other plans and programs. The Findings can be found on the Kern COG web site at http://www.kerncog.org/cms/transportation/aq-conformity. The Conformity Findings include a complete description of each TCM contained in the current SIP, the SJVAPCD AQAP, the TCM Program, and in the ROP Plans.

Environmental Impacts, Mitigation Measures, and Significance After Mitigation

Methodology

The impact assessment for air quality focuses on potential effects the Project might have on air quality within the Kern region. The assessment is not site or individual improvement project-specific but is a regional analysis.

Criteria for Significance

The CEQA Guidelines establish that a significant impact would be expected to occur if the project would:

- Conflict with or obstruct with implementation of an applicable air quality plan;
- Violate any air quality standard or contribute to an existing or projected air quality violation;
- Result in cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard;
- Expose sensitive receptors to substantial pollutant concentrations; and
- Create objectionable odors affecting a substantial number of people.

Development of the Project would generate air pollutant emissions from a wide variety of stationary and mobile sources. Stationary source emissions would be generated by transportation facility construction activities. Mobile source emissions would be generated by motor vehicle travel associated with construction activities and use of the improvement projects included in the Project. This section of the Air Quality Assessment addresses and analyzes the regional or area-wide and the localized air quality impacts associated with the Project. A discussion of significance criteria and an assessment of construction emissions are presented below based on the methodologies recommended in the SJVAPCD's *Guide for Assessing and Mitigating Air Quality Impacts*.

Short-Term Construction Impacts

Impact 3.3.1

Construction activities would increase short-term air emissions. This would be considered a less than significant impact.

Short-term impacts result from the following construction-related sources:

- Construction equipment emissions;
- Dust from grading and earthmoving operations; and
- Emissions from workers' vehicles traveling to and from construction sites.

As individual transportation improvements are constructed, the activity at individual construction sites will involve grading and other earth-moving operations and the use of diesel and gasoline-powered construction equipment. These generate exhaust emissions of carbon monoxide and nitrogen dioxide at the individual construction sites. Where asphalt is used, volatile organic compounds (VOC) will be released from asphalt when it is applied to roadway surfaces. If an individual construction site is located near existing homes or other sensitive receptors, such emissions could have the potential to result in significant short-term impacts at that particular location.

The District has developed thresholds of significance for individual construction projects. Individual improvement project-level analysis conducted for CEQA purposes would estimate construction emissions for each individual improvement project based on the equipment used, vehicle miles traveled, and time allowed to complete the project. Mitigation measures to reduce air quality impacts would be established in individual improvement project-specific environmental documents. However, some of the larger projects could have the potential to exceed the significance thresholds established by the District, creating significant short-term impacts. These impacts would occur in localized areas depending on the construction site locations.

Since the Project proposes more highway and arterial projects than the No Project Alternative, short-term construction emissions would be greater. However, construction-related impacts are expected to be temporary in nature and can generally be reduced to a less than significant level through the use of mitigation measures and through compliance with applicable existing city, county, state, and District regulations for reducing construction-related emissions. Therefore, the increase in construction activities proposed by the Project is expected to constitute a less than significant impact on a programmatic level. Nonetheless, individual projects may exceed the emissions thresholds, which would constitute a project-level significant impact. Individual projects would be required to implement mitigation measures to reduce construction emissions.

Mitigation Measures

All mitigation measures will be included in project-level analysis, as appropriate. The individual improvement project proponent or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with mitigation measures.

- Implementation agencies will ensure implementation of mitigation measures to reduce PM_{10}, $PM_{2.5}$, and NOx emissions from construction sites, including:
  - Maintain on-site truck loading zones;
  - Configure on-site construction parking to minimize traffic interference and to ensure emergency vehicle access;
  - Provide temporary traffic control during all phases of construction activities to improve traffic flow;
  - Use best efforts to minimize truck idling to not more than two minutes during construction;
  - Apply non-toxic soil stabilizers (according to manufacturers' specifications) to all inactive construction areas;
  - During construction, replace ground cover in disturbed areas as quickly as possible;
  - During construction, enclose, cover, water twice daily or apply non-toxic soil binders (according to manufacturers' specifications) to exposed piles with five percent (5%) or greater silt content and to all unpaved parking or staging areas or unpaved road surfaces;
  - During the period of construction, install wheel washers where vehicles enter and exit unpaved roads onto paved roads, or wash off trucks and any equipment leaving the site each trip;
  - During the period of construction, assure that traffic speeds on all unpaved roads be reduced to fifteen (15) mph or less;
  - Pave all construction access roads at least 100 feet on to the site from permanent roadways; and
  - Cover all haul trucks.

- Implementation agencies will avoid improvement project designs requiring significant amounts of material, such as excavated soil and construction debris, to be transported from the site to disposal facilities. Construction sites will employ a balanced cut/fill ratio to the extent possible, thus reducing haul-truck trip emissions.

Significance After Mitigation

Less than significant.

Impact 3.3.2

Traffic conditions at some individual locations may lead to occasional localized carbon monoxide concentrations.

The proposed Project will improve traffic flows and reduce congestion system-wide, reducing the potential for carbon monoxide "hot spots" that can occur from exhaust of idling cars waiting to clear a heavily congested intersection or crossing. The Project is intended to reduce congested conditions throughout the system that is faced with a challenge to accommodate additional traffic generated by projected population. While the proposed improvements will respond to this challenge by accommodating additional traffic and reducing congestion (brought by that additional traffic) system-wide, exhaust emissions from cars at localized areas may, at certain times, create a potential for carbon monoxide concentrations, or hot spots, to develop under adverse atmospheric conditions that prevent a rapid dispersion of carbon monoxide. Currently, the Air Basin is in attainment of federal and state standards for carbon monoxide, and the carbon monoxide emissions are not a serious problem in the Basin. Nonetheless, because there is a potential for exhaust emissions from cars at localized areas to create an occasional hot spot, the following mitigation measure is proposed.

Mitigation Measure

- At those facilities or intersections near sensitive receptors where carbon monoxide concentrations may exist, the implementing agency will reduce or alleviate these concentrations by improving traffic flows through improved signalization, restriping, addition of traffic lanes, and other improvements identified as part of the environmental review of an individual improvement project.

Significance After Mitigation

The Project will result in beneficial effects of system-wide improvement in traffic flows and reduced congestion, which would reduce the potential for forming carbon monoxide hot spots. At some locations where instances of congested conditions may occur near sensitive receptors, implementation of identified mitigation is anticipated to ensure improved traffic flows such that the potential for creating a hot spot will be reduced to a less than significant level.

Long-Term Impacts

Impact 3.3.3 – Emission Impacts

Emissions impacts related to the Project are not considered to be significant. Tables 3-8A and 3-8B identify air quality conformity analysis results for the SJVAB portion of Kern County including the projected emissions of hydrocarbons, nitrogen oxides, carbon monoxide, volatile organic gases, and particulate emissions for the Project compared with the base or the emissions budgets for various years. The analysis shows that Project emissions do not exceed the base and budget thresholds established by EPA. The analysis conducted to determine the emissions estimates versus budgets is for purposes of determining the environmental impacts of the Project. As a result, the information presented in the following tables is not representative of an official conformity run or finding. The analysis provided uses the most recent available assumptions and the most recently agreed upon methodology for preparing

a conform analysis within the region. While the Project meets conformity requirements, previous Conformity Findings require the implementation of TCMs to eventually result in improved air quality within the Valley. Table 3-8C provides analysis results for the Mojave Air Basin portion of Kern County.

Mitigation Measure

- The various TCMs that have been incorporated into the Air District AQAP, ROP Plans, and the SJVAPCD TCM Program, or have been identified as necessary to provide for positive air quality conformity findings, as referenced in the latest Air Quality Conformity Findings for the 2011 RTP and other plans and programs.

Significance After Mitigation

The Project will result in beneficial effects of system-wide improvement in traffic flows and reduced congestion, which would reduce the potential for increased air emissions. While TCMs have been identified in the Air Quality Conformity Findings, the TCMs will not result in attainment of all pollutants over time or by the year 2035. As a result, long-term emission impacts cannot be reduced to a less than significant level.

TABLE 3-8A
Conformity Results for RTP Projects
KERN (SJV)

Pollutant	Scenario	Emissions Total		DID YOU PASS?
		CO (tons/day)		CO
Carbon Monoxide	2010 Budget	180		
	2017	69		YES
	2018 Budget	180		
	2018	67		YES
	2025	52		YES
	2035	51		YES

		ROG (tons/day)	NOx (tons/day)		ROG	NOx
Ozone	2011 Budget	15.7	79.4			
	2011	14.1	72.3		YES	YES
	2014 Budget	13.5	64.1			
	2014	11.9	57.0		YES	YES
	2017 Budget	11.6	49.5			
	2017	10.3	43.7		YES	YES
	2023	8.2	27.7		YES	YES
	2025	7.9	25.4		YES	YES
	2035	7.5	23.2		YES	YES

		PM-10 (tons/day)	NOx (tons/day)		PM-10	NOx
PM-10	Adjusted 2020 Budget	14.7	39.5			
	2020	12.7	34.1		YES	YES
	Adjusted 2020 Budget	14.7	39.5			
	2025	12.9	25.6		YES	YES
	Adjusted 2020 Budget	16.5	36.8			
	2035	16.5	23.3		YES	YES

TABLE 3-8A (Cont.)
Conformity Results for RTP Projects
KERN (SJV)

Option 1: Assumes Adequate Conformity Budgets

		PM2.5 (tons/day)	NOx (tons/day)		PM2.5	NOx
1997 PM2.5 24-Hour & Annual Standards and 2006 24-Hour Standard	2012 Budget	3.0	74.2			
	2012	2.7	67.7		YES	YES
	2014	2.4	57.3		YES	YES
	2017	1.9	43.3		YES	YES
	2025	1.4	24.1		YES	YES
	2035	1.4	21.8		YES	YES

Option 2: Assumes no EPA action on conformity budgets

		PM2.5 (tons/day)	NOx (tons/day)		PM2.5	NOx
1997 PM2.5 24-Hour Standards	2002 Base Year	3.7	94.1			
	2014	2.4	57.3		YES	YES
	2017	1.9	43.3		YES	YES
	2025	1.4	24.1		YES	YES
	2035	1.4	21.8		YES	YES

		PM2.5 (tons/year)	NOx (tons/year)		PM2.5	NOx
1997 PM2.5 Annual Standard	2002 Base Year	1351	34347			
	2014	876	20915		YES	YES
	2017	694	15805		YES	YES
	2025	511	8797		YES	YES
	2035	511	7957		YES	YES

		PM2.5 (tons/day)	NOx (tons/day)		PM2.5	NOx
2006 PM2.5 24-Hour Standards	2008 Base Year	3.6	98.9			
	2014	2.4	57.3		YES	YES
	2017	1.9	43.3		YES	YES
	2025	1.4	24.1		YES	YES
	2035	1.4	21.8		YES	YES

TABLE 3-8B
Conformity Results for RTP Projects
KERN (Mojave Desert)

Pollutant	Scenario	Emissions Total			DID YOU PASS?	
		ROG (tons/day)	NOx (tons/day)		ROG	NOx
Ozone	2008 Budget	5	18			
	2011	3	13		YES	YES
	2015	2	9		YES	YES
	2025	2	5		YES	YES
	2035	2	5		YES	YES

TABLE 3-8C
Conformity Results for RTP Projects
KERN (Indian Wells Valley)

Pollutant	Scenario	Emissions Total		DID YOU PASS?
		PM-10 (tons/day)		PM-10
PM-10	2001 Budget	1.6		
	2011	1.2		YES
	2013 Budget	1.7		
	2013	1.0		YES
	2015	0.9		YES
	2025	1.1		YES
	2035	1.3		YES

3.4 BIOTIC RESOURCES

This section describes the existing biological resources in Kern County, potential impacts to biological resources as a result of the Kern County 2011 RTP, recommended mitigation measures to help avoid or reduce potential impacts to biological resources, and the level of significance after mitigation.

This assessment is based primarily on the 1998 and 2007 Kern COG RTP Environmental Impact Reports (EIRs), Kern County General Plan Final EIR, and the California Department of Fish and Game's (CDFG) California Natural Diversity Database (CNDDB). Due to the programmatic nature and current level of detail about the proposed Project, this analysis is necessarily broad and more general than an individual improvement project-level analysis. Consequently and appropriately, existing biological resources are discussed on a regional level. Potential impacts identified in this assessment would typically occur during the construction and operation of transportation facilities. Due to the broad Project description, all individual improvement project-specific impacts cannot be analyzed at this time. This assessment should be considered preliminary and appropriate for general policy planning. Site-specific biological resource evaluations will be necessary, at a later date, to determine individual improvement project-level environmental impacts and mitigation.

Regulatory Setting

The following paragraphs summarize the regulatory context under which biological resources are managed at the federal, state and local levels.

Federal Regulations

- Migratory Bird Treaty Act (16 USC Section 703-711)

  The Migratory Bird Treaty Act (MBTA) of 1918, implemented by the USFWS, is an international treaty that makes it unlawful to take, possess, buy, sell, purchase, or barter, any migratory bird listed in 50 CFR Part 10, including feathers or other parts, nests, eggs or products, except as allowed by implementing regulations (50 CFR 21). The MBTA requires that Project-related disturbance at active nesting territories be reduced or eliminated during critical phases of the nesting cycle (1 February to 31 August, annually).

- Bald and Golden Eagle Protection Act (16 USC Section 668)

  The Bald and Golden Eagle Protection Act provides for the protection of the bald eagle (the national emblem) and the golden eagle by prohibiting, except under certain specified conditions, the taking, possession, and commerce of such birds. If compatible with the preservation of bald and golden eagles, the Secretary of the Interior may permit the taking, possession and transportation of bald and golden eagles and nests for scientific or religious purposes, or for the protection of wildlife, agricultural or other interests. The Secretary of the Interior may authorize the take of golden eagle nests, which interfere with resource development or recovery operations. Bald eagles may not be taken for any purpose unless the Secretary issues a permit prior to the taking.

- Clean Water Act (33 USC 1252-1376)

  Section 401 of the Clean Water Act (CWA) requires an applicant to obtain certification for any activity that may result in a discharge of a pollutant into Waters of the United States. As a result, proposed fill in waters and wetlands requires coordination with the appropriate State Regional Water Quality Control Board (RWQCB) that administers Section 401 and provides certification. The RWQCB also plays a role in review of water quality and

wetland issues, including avoidance and minimization of impacts. Section 401 certification is required prior to the issuance of a Section 404 permit.

Under Section 404 of the CWA, the U.S. Army Corps of Engineers (ACOE) has jurisdiction over "Wetlands" and "Waters of the United States." Permitting of activities that could discharge fill or dredge materials or otherwise adversely modify wetlands or other waters of the United State and associated habitat is required. Permits authorized by ACOE under the CWA typically involve mitigation to offset unavoidable impacts on wetlands and other waters of the United States in a manner that achieves no net loss of wetland acres or values.

- Executive Order 11990, Protection of Wetlands (May 24, 1977)

  This Executive Order establishes a national policy to avoid adverse impacts on wetlands whenever there is a practicable alternative. On projects with federal actions or approvals, impacts on wetlands must be identified in the environmental document. Alternatives that avoid wetlands must be considered. If wetland impacts cannot be avoided, then all practicable measures to minimize harm to those wetlands must be included. This must be documented in a specific Wetlands Only Practicable Alternative Finding in the final environmental document for a proposed individual improvement project.

- Section 10 of the Rivers and Harbors Act (33 USC 401 et seq.)

  Section 10 of the Rivers and Harbors Act is administered by the ACOE. This Section requires permits in navigable waters of the United States for all structures such as riprap and activities such as dredging. Navigable waters are defined as those subject to the ebb and flow of the tide and susceptible to use in their natural condition or by reasonable improvements as means of interstate transport or foreign commerce. The ACOE grants or denies permits based on the effects on navigation. Most activities covered under this act are also covered under Section 404 of the CWA.

- Fish and Wildlife Coordination Act (16 USC 661-666)

  The Fish and Wildlife Coordination Act (FWCA) applies to federal projects where the waters of any stream or other body of water are impounded, diverted, deepened, or otherwise modified. Project proponents are required to consult with the USFWS and the CDFG. These agencies prepare reports and recommendations that document project effects on wildlife and identify measures that may be adopted to prevent loss or damage to plant and animal resources. Provisions of the FWCA are implemented through the NEPA and Section 404 permit processes.

- Federal Endangered Species Act (ESA) (16 U.S. Code Section 153 et seq.)

  The United States Fish and Wildlife Service (USFWS), under the auspices of the Federal Endangered Species Act of 1973 (FESA), manages and protects species listed as endangered or threatened. The USFWS can issue a permit for incidental "take" of listed species as a result of otherwise lawful activities. Take, under the federal definition, means to harass, harm (including habitat modification), pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct. The permitting process is used to determine if a project would jeopardize the continued existence of listed species and the mitigation measures that would be required to avoid or minimize impacts to listed species. Procedures for obtaining a permit for incidental take are identified under Section 7 of the FESA for federal properties or where federal actions are involved, and are identified under Section 10 of the FESA for non-federal actions.

  Candidate species do not have the full protection of the FESA; however, the USFWS advises applicants that candidate species could be elevated to listed species at any time.

- National Environmental Policy Act (NEPA)

  The National Environmental Policy Act (NEPA) of 1969 established national policies and goals for the protection of the environment. NEPA directs all federal agencies to give proper consideration of the environment prior to commencing any federal action that may significantly affect the environment.

Federal Agencies

- U.S. Bureau of Land Management (BLM)

  The U.S. Bureau of Land Management (BLM) manages large rural land areas, including land that is environmentally sensitive. The BLM governs uses that are allowed on land that it manages, striving to balance environmental protection and conservation goals with other uses such as recreation and grazing.

- National Forest Service

  The Forest Service was established in 1905 and is an agency of the U.S. Department of Agriculture. The Forest Service manages public lands in national forests and grasslands.

- Council on Environmental Quality (CEQ) and U.S. Environmental Protection Agency (US EPA)

  The Council on Environmental Quality oversees NEPA, and the EPA carries out administrative aspects of the NEPA process. NEPA mandates that the federal government shall give appropriate consideration to potential adverse environmental impacts of their major actions, including impacts to biological resources.

- U.S. Fish and Wildlife Service (USFWS)

  The U.S. Fish and Wildlife Service (USFWS) administers the Federal Endangered Species Act (FESA), which designates critical habitat for endangered species. This enables USFWS to carry out its mission to conserve, protect, and enhance the nation's fish and wildlife and their habitats for the continuing benefit of people. Critical habitat areas cannot be disturbed without permission from the USFWS and other federal agencies, depending on land ownership. The USFWS also manages a system of land and waters for the conservation of wildlife and associated ecosystems. These National Wildlife Refuges are primarily managed for the preservation and protection of unique or important resources and ecosystems.

- U.S. Army Corps of Engineers (COE)

  The ACOE has regulatory authority over waters of the U.S. under Section 404 of the CWA. The term "waters of the U.S." includes (1) all waters that are or may be used in interstate or foreign commerce (including sightseeing or hunting), including all waters subject to the ebb and flow of the tide; (2) wetlands; (3) all waters such as interstate lakes, rivers, streams, mudflats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce; (4) all impoundments of water mentioned above; (5) all tributaries of waters mentioned above; (6) the territorial seas; and (7) all wetlands adjacent to the waters mentioned above.

  Federal jurisdiction is dependent upon a demonstrated nexus between the subject water feature and navigable waters or interstate commerce. Previously, the ACOE had routinely asserted jurisdiction over any isolated waters that could be used by migratory birds, thus establishing an interstate commerce nexus. A recent U.S. Supreme Court decision in the Solid Waste Agency of Northern Cook County vs. U.S. Army Corps of Engineers (SWANCC) case determined that "non-navigable, isolated, and intrastate" waters whose sole reason for being

regulated was their connection to migratory bird usage will not be regulated by the ACOE. Therefore, any drainage or surface water features delineated within the project site must exhibit a connection to navigability or commerce to constitute a water of the U.S. federal wetlands are defined as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." The ACOE methods for determining the boundaries of jurisdictional wetlands are described in the 1987 Manual (Environmental Laboratory 1987). The methods set forth in the manual are based on the following three indicators that are normally present in wetlands: (1) hydrology providing permanent or periodic inundation by groundwater or surface water, (2) hydric soils, and (3) hydrophytic vegetation. In order to be considered a wetland, an area must exhibit at least minimal hydric characteristics within all three parameters.

State Regulations

- California Environmental Quality Act

  The California Environmental Quality Act (CEQA) was adopted in 1970 and intended to inform governmental decision-makers and the public about potential environmental effects of a project; identify ways to reduce adverse impacts; offer alternatives to the project; and disclose to the public why a project was approved. CEQA applies to projects undertaken, funded, or requiring an issuance of a permit by a public agency.

- California Endangered Species Act (Fish and Game Code 2050 et seq.)

  The California Endangered Species Act (CESA) establishes state policy to conserve, protect, restore, and enhance threatened or endangered species and their habitats. CESA mandates that state agencies should not approve projects that would jeopardize the continued existence of threatened or endangered species if reasonable and prudent alternatives are available that would avoid jeopardy. CESA definitions of endangered and threatened species parallel those defined in the FESA. Take authorizations from CDFG are required for any unavoidable impact to state-listed species resulting from proposed projects.

  The CDFG designates a species as a species of special concern prior to considering the species for protected status. Species of special concern are those species for which CDFG has information indicating that the species is declining.

- Native Plant Protection Act (Fish and Game Code Sections 1900-1913)

  California's Native Plant Protection Act (NPPA) requires all state agencies to establish criteria for determining if a species, subspecies, or variety of native plant is endangered or rare. Provisions of the NPPA prohibit the taking of listed plants from the wild and require notification of the CDFG at least 10 days in advance of any change in land use, which would adversely impact listed plants. This requirement allows CDFG to salvage listed plant species that would otherwise be destroyed.

- Fish and Game Code Sections 1600-1616

  The CDFG, through provisions of the Fish and Game Code Sections 1600-1616, is empowered to issue agreements (Streambed Alteration Agreements) for projects that would "divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake" (Fish and Game Code Section 1602[a]). Streams and rivers are defined by the presence of a channel bed and banks, and subject to water flow. The limits of CDFG jurisdiction are also based on riparian habitat and may include riparian areas that do not meet ACOE criteria for soils and/or

hydrology (e.g., where riparian woodland canopy extends beyond the banks of a stream away from frequently saturated soils).

- State Park System (SPS)

  The SPS is the most ecologically diverse system of protected lands in the state. The long-term preservation of the state's biological and physical values is a core function of the California Department of Parks and Recreation. Sustaining these values is a high priority of its acquisition (and restoration) program.

- California's Important Bird Area

  Kern County is located on the Pacific Flyway, and various efforts have been undertaken to conserve the County's migratory bird habitat. Audubon California's Important Bird Area (IBA) Program was launched in 1996. With the initiation of the California IBA Report, dozens of California field ornithologists, representing a broad range of agencies and affiliations, were interviewed and questioned about sites significant to birds in the state. These interviews and resulting suggestions were incorporated into a comprehensive assessment of sites. This document was reviewed by an IBA Advisory Board in November 2001, and released in final draft form in December 2001. The report describes over 200 areas, found in all 58 counties that meet eight criteria for identification as an IBA. There are seven Important Bird Areas in Kern County: Buena Vista Lake Bed, Carrizo Plain National Monument, Goose Lake, Kern National Wildlife Refuge Area, Kern River Preserve, North Kern Grasslands, and Taft Hills.

- Natural Community Preservation Act (NCPA)

  The Natural Community Preservation Act aims at protecting many species using a regional approach to habitat preservation.

State Agencies

- California Department of Fish and Game (CDFG)

  CEQA includes the policy of the state to "prevent the elimination of fish or wildlife species due to man's activities, ensure that fish and wildlife populations do not drop below self-perpetuating levels, and preserve for future generations representations of all plant and animal communities." CEQA directs agencies to consult with the CDFG on any project the agency initiates that is not statutorily or categorically exempt from CEQA. CEQA Guidelines(Section 15065(a)) declare that impacts to rare, threatened or endangered plants or animals are significant, and impacts to other species may be considered significant by the lead agency, depending on the applicability of other laws (e.g., Migratory Bird Treaty Act) and the discretion of the agency.

  CDFG is required under the California Endangered Species Act (CESA), California Native Plant Protection Act (NPPA), CEQA, and Natural Community Conservation Planning Act (NCPPA) to conserve species through listing, habitat acquisition and protection. The CDFG is also responsible for review of local land use planning, multi-species conservation planning, stewardship, recovery, research, and education.

  CDFG is authorized to enter into Streambed Alteration Agreements with applicants that propose a project that would obstruct the flow or alter the bed, channel, or bank of a river or stream, including intermittent and ephemeral streams, where there is a fish or wildlife resource. Streambed Alteration Agreements usually include measures designed to protect biological resources.

- California Department of Forestry and Fire Protection (CDF)

  The California Department of Forestry and Fire Protection (CDF) reviews and approves plans for timber harvesting on private lands. In addition, the CDF plays a role in planning development in forested areas as a part of its responsibility for fighting wildland fires.

- California Department of Parks and Recreation (CDPR)

  The principal mission of the California Department of Parks and Recreation (CDPR) is to provide sites for a variety of recreational and outdoor activities to California residents and tourists. Natural resource management and protection is also a part of the mission of CDPR. Different park designations dictate the extent to which natural resources are a management priority; natural preserves, state parks, state reserves and state wilderness designations are terms, which indicate that an area has outstanding natural features. The California Department of Parks and Recreation is a trustee agency that owns and operates all state parks and participates in land use planning affecting state parkland.

- Regional Water Quality Control Board

  The RWQCB is the primary agency responsible for protecting water quality in California under Section 401 of the Federal CWA and the California Porter-Cologne Water Quality Control Act. The RWQCB defines "waters of the state" as any surface water or groundwater, including saline waters, within the boundaries of the state. The RWQCB's jurisdiction includes waters of the U.S., which are considered a subset of waters of the state.

County, City or Local Regulations

- Kern County General Plan

  The Kern County General Plan outlines the policies by which biological resources are managed throughout Kern County. The plan includes policies for the protection of oak woodlands and large oak trees.

- Preserves, Refuges and other Protected Areas

  There are areas in Kern County that provide protection, preservation and conservation for native vegetation and wildlife. These areas totaling 1,226,558 acres and include Red Rock Canyon State Park, Bitter Creek National Wildlife Refuge, Mt. Pinos Condor Area, Coles Levee Ecosystem Reserve, Wind Wolves Preserve, Desert Tortoise Research Natural Area, Tule Elk State Preserve, Kern National Wildlife Refuge, Jawbone & Butterbredt Spring, Lokern Preserve, Mourning Cloak Ranch, The United States Bureau of Land Management (Department of the Interior) and the United States Forest Service (Department of Agriculture). United States Army Corps of Engineers, Sand Ridge Preserve, Semitropic Ridge Preserve, National Audubon Society, California Chapter, and the Kern Primrose Sphinx Moth Walker Basin Preserve.

Habitat Conservation Plans

- Metropolitan Bakersfield Habitat Conservation Plan

  The Metropolitan Bakersfield Habitat Conservation Plan (MBHCP) is a program that addresses the effect of urban growth on federal and state protected plant and animal species within the 400+ square mile area covered by the Metropolitan Bakersfield General Plan. The MBHCP is a joint program of the City of Bakersfield and Kern County that was undertaken to assist urban development applicants in complying with state and federal endangered species laws. The MBHCP utilizes a mitigation fee paid by development applicants for grading or

building permits to fund the purchase and maintenance of habitat land to compensate for the effects of urban development on endangered species habitat. Lands to be acquired for the program are generally located outside the Metropolitan Bakersfield area.

To complete this program, the County and City of Bakersfield have entered into a legal agreement with the DFG and USFWS that specifies obligations in conjunction with the MBHCP. The agreement allows the County and City to receive habitat mitigation credit that can be applied against future habitat loss that accompanies urban development.

- Valley Floor Habitat Conservation Plan

Kern County, along with the California Division of Oil, Gas and Geothermal Resources (DOGGR), CDFG, and USFWS are developing (as of 1998) a long-term program designed to conserve federal and state protected plant and animal species. The Memorandum of Understanding (MOU) approved in 1989 also includes the Bureau of Land Management (BLM) and the California Energy Commission (CEC). At the Kern County Endangered Species Work Group and the Conservation Alternatives Subcommittee, the Valley Floor Habitat Conservation Plan (VFHCP) was developed for the protection of identified plant and animal species. In addition, species of concern, not currently protected, are listed; this list includes taxa that may become listed during the 30-year term of the permit.

The VFHCP program area covers 3,110 square miles and generally includes most of the San Joaquin Valley Floor portion of Kern County up to an elevation of 2,000 feet. On the west side, the program area extends to the San Luis Obispo County line, which included some areas at elevations over 2,000 feet. The program does not cover several discrete areas including the Kern Water Bank, Coles Levee Ecosystem Preserve, the former Elk Hills Naval Petroleum Reserve No. 1 and Buena Vista Naval Petroleum Reserve No. 2. Each of these areas is included in a program similar to an HCP. The VFHCP will be managed by Kern County and DOGGR, with advisory members including BLM, the oil and gas industry, agriculture and cattle industry, building industry, and relevant environmental and special interest groups.

- West Mojave Plan and West Mojave Habitat Conservation Plan

In response to concerns regarding impacts on species, diminishing habitat and difficulty in complying with the FESA and CESA on public and private land within the Mojave Desert, a consortium of government agencies has initiated preparation of the West Mojave Plan (WMP). The WMP covers approximately 9.4 million acres encompassing most of California's western Mojave Desert. The WMP area extends from Olancha in Inyo County on the north to the San Gabriel and San Bernardino Mountains on the south, and from the Antelope Valley on the west to the Mojave National Preserve on the east. About one third of this area is private land, another third lies within military bases, and the final third consists of public land managed by the BLM. 1.5 million acres are located in Kern County.

The WMP is being prepared jointly by agencies having administrative responsibility or regulatory authority over species of concern within the WMP area. The participating agencies are cooperating with several diverse entities including local businesses, environmental groups, and other parties with a stake in the planning process. Kern County is a cooperating agency under NEPA on the WMP that covers public lands and is a Responsible Agency under CEQA for the West Mojave Habitat Conservation Plan (WMHCP) that covers private land.

The WMHCP will enable the USFWS and CDFG to issue programmatic biological opinions, incidental take permits, and "no surprises" assurances to each of the participating agencies at the conclusion of the planning process. The WMHCP is an attempt to define a regional strategy for conserving 58 plant and animal species and their habitats, and to define a process for complying with threatened and endangered species laws. In

addition, the WMHCP will provide a streamlined permitting process and define consistent mitigation measures and compensation obligation.

Kern County has actively participated in the planning process and is a member of the Steering Committee. In formulation for over 10 years, this multi-species effort is intended to cover activities in unincorporated areas of eastern Kern County. California City and Ridgecrest are also participating in formulation of the plan. Focused studies and extensive review of literature, as well as consultation with wildlife experts, have been completed on the desert area, and species likely to occur have been identified. A draft Program Environmental Impact Statement/Environmental Impact Report has been prepared on the plan and was released for comment in June 2003.

- Kern County Waste Facilities Habitat Conservation Plan

The Kern County Waste Management Department (KCWMD) is responsible for 14 sanitary landfills in Kern County outside the Metropolitan Bakersfield HCP area. The 2063.8 acre Kern County Waste Facilities Habitat Conservation Plan (KCWFHCP) contains 1151.7 acres of undisturbed areas for which all appropriate state and federal waste permits have been obtained for future use. The Lebec Sanitary Landfill and the Kern Valley Sanitary Landfill have been closed. The Arvin and Buttonwillow Sanitary Landfills are currently inactive and awaiting final closure and McFarland/Delano, has been formally closed. KCWMD is currently operating the nine active landfills and three transfer stations under permit from the California Integrated Waste Management Board. The KCWFHCP is in the process of being amended to cover expansions at the remaining active landfills. The purpose of the approved KCWFHCP is to ensure that take is avoided or minimized, and to compensate for any habitat loss as a result of facility operations.

Environmental Setting

Kern County encompasses an area of varied topography and diverse ecosystems. Portions of the Coastal Range foothills, Sierra Nevada Range, San Joaquin Valley, and Mojave Desert are located in Kern County. This highly varied terrain and climate result in a diversity of flora.

Terrestrial Biota and Habitats

It is important to note that plant communities are not always clearly defined with strictly delineated boundaries. Plant communities are dependent on or affected by factors such as geographical location, soil types, precipitation rates, angle and direction of slopes, elevations, microclimates and successional considerations. Therefore, it is not uncommon to find a particular plant or grouping of plants growing outside the area that would be considered their customary habitats if some of the above factors are advantageous to that growth. Major plant communities within Kern County include urban/developed, agriculture, sage scrub, oak woodland and forest, valley grassland, creosote brush scrub, desert saltbush scrub, foothill pine-oak woodlands, montane coniferous forest, Pinyon-juniper woodland, riparian woodland, and Mojave mixed woody scrub.

- Urban/Developed

Urban or developed land is comprised of areas of intensive use with much of the land covered by structures. Included in this category are cities, transportation, power and communications facilities, residences, mills, shopping centers, industrial and commercial complexes, and institutions that may, in some instances, be isolated from urban areas. Agricultural land, forest, wetland, or water areas on the fringe of urban or built-up areas are not included in this category except where they are surrounded and dominated by urban development.

- Agriculture

  Agricultural land may be defined broadly as land used primarily for production of food and fiber and includes crop fields, orchards, vineyards, and grazing lands. The number of building complexes is smaller and the density of the road and highway network is much lower in agricultural land than in urban or developed land. Lands producing economic commodities such as wild rice, cattails, or certain forest products commonly associated with wetlands are excluded from the agriculture category and carry a wetlands designation. Similarly, when wetlands are drained for agricultural purposes, then they are included in the agriculture category. Agricultural lands that are no longer in use and where wetland vegetation has reestablished are included in the wetlands category.

- Sage scrub

  Also called soft chaparral, sage scrub occurs primarily below 914 meters (m) (3,000 feet (ft)) and is found primarily on western slopes of mountains, on steep, south-facing, wind-exposed slopes, and in areas where the marine layer penetrates inland to foothills and canyons. Shrubs are more widely spaced than those typical of chaparral and do not have the characteristic rigidness or thick drought resistant leaves of chaparral plants. Remaining dormant throughout the dry season, plants drop either their leaves or produce smaller leaves on secondary shoots during the summer, which reduces water loss. Root systems are generally shallow and some shrubs store water in succulent leaves and stems. Other plants produce aromatic oils from the surfaces of leaves, making them less appealing to grazing animals and reducing water loss, but at the cost of increased flammability during the fire season. Typical species in this community include California sagebrush (*Artemisia californica*), ashyleaf buckwheat (*Eriogonum cinereum*), long-stemmed buckwheat (*E. elongatum*), California buckwheat (*E. fasciculatum*), white sage (*Salvia apiana*), black sage (*S. mellifera*), purple sage (*S. leucophylla*), bush monkeyflower (*Mimulus longiflorus*), California bush sunflower (*Encelia californica*), coyote brush (*Baccharis pilularis*), sawtooth and coast goldenbush (*Hazardia squarrosus* and *Isocoma menziesii*), laurel sumac (*Malosma laurina*), wooly blue curls (*Trichostema lanatum*), canyon sunflower (*Venegasia carpesioides*), deerweed (*Lotus scoparius*), golden yarrow (*Eriophyllum confertiflorum*), coast prickly pear (*Opuntia littoralis*), lupines (*Lupinus* spp.) and Canadian wildrye (*Elymus canadensis*).

- Oak woodland and forest

  The types of oak communities identified within Kern County include blue oak woodland, valley oak woodland, interior live oak forest and canyon live oak forest. Blue oak woodland is dominated by blue oak (*Quercus douglasii*), but may include representatives of other trees such as gray pine (*Pinus sabiniana*). Stands vary from open savannas with grassy understories to fairly dense woodlands with shrubby understories. Blue oak woodlands are typical of well-drained soils from 914 to 1,219 m (3,000 to 4,000 ft).

  Valley oak woodland stands form grassy-understoried savannas rather than dense woodlands. Valley oak (*Quercus lobata*) is usually the only tree present. This winter-deciduous species is California's largest broad-leaved tree and reaches heights of 15 to 35 m (49 to 115 ft) when mature. Valley oak communities thrive in deep, well-drained alluvial soils, usually in valley bottoms. They are also found in non-alluvial settings in the South Coast and Transverse ranges.

  Interior live oak forests form a dense, closed-canopy evergreen forest dominated by interior live oak (*Quercus wislizenii*) with brushy understories. Interior live oak forests occupy mountainsides, broad, alluvial river banks, and valley bottoms and foothills.

  Canyon live oak forest is dominated by canyon live oak (*Quercus chrysolepis*) which typically forms forests with little understory. The growing season for this community extends from late spring into summer. Trees often have multiple trunks, probably from crown-sprouting after fires. Canyon live oak forests appear in canyons, on

north-facing slopes in stands up to 20 m (66 ft) tall, and in low, chaparral-like stands less than 10 m (33 ft) tall on south-facing slopes. Canyon live oak communities may be mixed with and not entirely distinct from mixed evergreen forests, blue oak woodlands, coast live oak forests, or northern mixed chaparral.

Oak woodlands and forests typically integrate with both valley grassland and riparian woodland. Annual rainfall is generally between 38 and 64 centimeters (cm) (15 and 25 inches (in)) and intermittent streams may be present. The dominant trees are valley oak, coast live oak (*Quercus agrifolia*), Engelmann oak (*Q. engelmannii*), black walnut (*Juglans californica*), western sycamore (*Platanus racemosa*), California bay laurel (*Umbellularia californica*), toyon, and blue elderberry (*Sambucus mexicana*). Smaller trees and shrubs along with herbaceous plants and grasses that form the vegetative understory include coffeeberry (*Rhamnus californica*), sugar bush (*Rhus ovata*), lemonadeberry (*Rhus integrifolia*), squawbush (*Rhus trilobata*), poison oak (*Toxicodendron diversilobum*), coastal wood fern (*Dryopteris arguta*), and bracken fern (*Pteridium aquilinium*).

- Valley grassland

Native valley grasslands are scarce in Southern California with few communities ranging more than a few acres in extent. In general, grasslands have changed in character from native, perennial bunchgrasses to introduced, annual species. Valley grassland occupies deep, sometimes rocky but usually well-drained soils in hot, interior valleys generally below 1,219 m (4000 ft). Grassland communities often occur on south-facing slopes but are more typically found on flatter land, adjacent to and often inter-mixed with chaparral, coastal sage scrub, and southern oak or riparian woodland. Annual rainfall typically ranges between 15 and 51 cm (six and 20 in). Summers are hot and dry and frost is not uncommon in the winter. Although sometimes dotted with oak species such as valley and coast live oak, grasslands are characterized primarily by shrinking expanses of native grasses such as needlegrass (*Nasella* sp.), bunchgrass (*Poa* sp.) or three-awn (*Aristida* sp.), and expanding areas of introduced grasses such as brome grass (*Bromus* sp.), wild oats (*Avena* sp.), fescue (*Festuca* sp.), ryegrass (*Lolium* sp.) and harding grass (*Phalaris* spp.). Springtime can bring an abundance of native and introduced wildflowers such as buttercup (*Ranunculus* sp.), larkspur (*Delphinium* sp.), mariposa lily (*Calochortus* sp.), tarweed (*Hemizonia* sp.), blue-eyed grass (*Sisyrinchium* sp.), blue dicks (*Dichelostemma capitatum*), paintbrush and owl's clover (*Castilleja* sp.), baby blue eyes and meadow nemophila (*Nemophila* and *N. menziesii* spp.), lupines, sow-thistle (*Sonchus* sp.), star-thistle (*Centaurea* sp.), and filaree (*Erodium* sp.).

- Creosote bush scrub

Creosote bush scrub is one of the most widely-spread desert communities. The majority of the desert floor and the lower slopes of foothills to 1,067 m (3,500 ft) are often covered by this scrub community. The soil in this community is well-drained and the climate consists of very high summer temperatures and winter temperatures rarely approaching freezing. Annual average rainfall is typically less than 5 cm (2 in) in a dry year to about 20 cm (8 in) in a wet one. Annual rainfall arrives in the form of summer showers and many of the shrubs and annual species bloom either in the summer or in the fall. Although creosote bush scrub is dominated by woody shrubs, both herbaceous annuals and perennials are also represented. This community is dominated by creosote bush (*Larrea tridentata*). Other common species include burroweed (*Ambrosia dumosa*), ocotillo (*Fouquieria splendens*), Mojave and Schott's indigo bush (*Psorothamnus arborescens* and *P. schottii*), desert thorn and Anderson's desert thorn (*Lycium brevipes* and *L. andersonii*), cheesebush (*Hymenoclea salsola*), brittlebush and rayless encelia (*Encelia farinosa* and *E. frutescens*), apricot or desert mallow (*Sphaeralcea ambigua*), and beavertail, teddybear and silver or golden cholla (*Opuntia basilaris*, *bigelovii* and *echinocarpa*).

- Desert saltbush scrub

Desert saltbush scrub is characterized by low, grayish, microphyllous shrubs, 0.3 to 1 m (1 to 3.3 ft) tall intermixed with some succulent species. Typical stands are strongly dominated by a single saltbush species

such as silverscale (*Atriplex argentea*), fourwing saltbush (*A. canescens*), shadscale saltbush (*A. confertifolia*), wheel-scale saltbush (*A. elegans* ssp. *fasciculata*), desert holly (*A. hymenelytra*), big saltbush (*A. lentiformis*), saltbush (*A. gardneri* var. *falcata*), Parish's brittlescale (*A. parryi*), arrowscale (*A. phyllostegia*), allscale (*A. polycarpa*), small-scale (*A. pusilla*), and Torrey's saltbush (*A. lentiformis* ssp. *torreyi*). Other common species include shrubby alkali aster (*Machaeranthera carnosa*), hop-sage (*Grayia spinosa*), cheese bush (*Hymenoclea salsola*), kochia (*Kochia californica*), Anderson's desert thorn (*Lycium andersonii*), boxthorn (*L. cooperi*), honey mesquite (*Prosopis glandulosa* ssp. *torreyana*), and western seepweed (*Suaeda occidentalis*). Shrubs are widely spaced, exposing bare ground. Desert saltbush scrub is suited to fine-textured, poorly drained soils with high alkalinity and/or salinity. This community is usually found on margins of dry lake beds in the Colorado, Mojave, and Great Basin deserts.

- Foothill pine-oak woodland

Foothill pine-oak woodlands are characterized by mixed or pure stands of digger pine (*Pinus sabiniana*) and blue oak (*Quercus douglasii*). Mixed stands are more common, with digger pine usually towering over the oaks in undisturbed stands. Understories are usually dominated by introduced annual plants. Soils are typically poor, shallow, and well-drained, and are located on rocky or exposed ridges or canyons. Foothill pine-oak woodlands form a nearly continuous belt around California's Central Valley between valley and foothill grassland and lower montane mixed conifer forest except for a gap in Tulare County where digger pine does not occur.

- Montane coniferous forest

Montane coniferous forest includes both yellow pine forest and subalpine forest. The former occupying mountain slopes from between 1,524 and 2,438 m (5,000 and 8,000 ft), and the latter is found above that to approximately 2,743 to 2,896 m (9,000 to 9,500 ft). The montane coniferous forest community primarily occupies ridge tops and cismontane slopes, which are considerably moister than the slopes on the desert-side of the mountains. Average annual precipitation for montane coniferous forest is between 89 and 127 cm (35 and 50 in), some of which falls as snow. Typical species encountered in the lower belt of montane forest are coulter pine (*Pinus coulteri*), ponderosa pine (*P. ponderosa*), jeffrey pine (*P. jeffreyi*), sugar pine (*P. lambertiana*), incense cedar (*Calocedrus decurrens*), white fir (*Abies concolor*), big-cone spruce (*Pseudotsuga macrocarpa*), western juniper (*Juniperus occidentalis*), black and canyon live oaks (*Quercus kelloggii* and *Q. chrysolepis*), curl-leaf mountain mahogany (*Cercocarpus ledifolius*), manzanitas (*Arctostaphylos* spp.), deerbrush and snowbush (*Ceanothus integerrimus* and *C. cordulatus*), bush chinquapin (*Chrysolepis sempervirens*), thimbleberry (*Rubus parviflorus*), Sierra currant and Sierra gooseberry (*Ribes nevadense* and *R. roezlii*), in addition to many species of lupine, buckwheat penstemon, and phacelia (*Eriogonum* spp., *Penstemon* spp. and *Phacelia* spp.). Above the yellow pine belt are lodgepole pine (*Pinus contorta*) and limber pine (*P. flexilis*), and many species of small subalpine wildflowers.

- Pinyon-juniper woodland

Pinyon-juniper woodlands are typically found on the desert-side of mountains, generally on the eastern slopes of north-south trending ranges and on the northern slopes of east-west trending ranges, at elevations from approximately 1,524 to 2,743 m (5,000 to 9,000 ft). In Southern California, these woodlands extend from the Tehachapi Mountains southward and include the higher mountains of the Mojave Desert. Average annual precipitation is between 30.5 and 51 cm (12 and 20 in), some of which is in the form of snow. The dominant trees are single-leaf pinyon pine (*Pinus monophylla*) and California and Utah juniper (*Juniperus californica* and *J. osteosperma*), desert scrub oak (*Quercus turbinella*), Tucker's oak (*Q. john-tuckeri*), Muller's oak (*Q. cornelius-mulleri*). Other species include Mojave and banana yucca (*Yucca shidigera* and *Y. baccata*), cliff rose and bitterbrush (*Purshia mexicana* and *P. tridentata*), apache plume (*Fallugia paradoxa*), and curl-leaf mountain-mahogany. Pinyon-juniper woodlands share many of the same scrub species as sagebrush scrub, including

silver sagebrush (*Artemisia cana*), black sagebrush (*A. nova*), Great Basin sagebrush (*A. tridentata*), rubber and yellow rabbitbrush (*Chrysothamnus nauseosus* and *C. viscidiflorus*), blackbrush (*Coleogyne ramosissima*), fourwing and shadscale saltbush (*Atriplex canescens* and *A. confertifolia*), horsebrush (*Tetradymia* spp.) and bitterbrush (*Purshia tridentata*).

- Riparian woodland

Riparian woodlands are dependent on the presence of or proximity to non-seasonal water sources. The water may be surface water or shallow ground water. Riparian woodlands may measure a few meters in width to much broader width depending on water flow. Where non-seasonal streams flow out of the mountains and onto flatter grasslands, the riparian woodland community may be relatively broad, but in the higher elevations where water flows down a narrow passageway often confined by steep hillsides, this community may be very narrow. Riparian woodland may also occupy areas surrounding man-made lakes and reservoirs. Typical species of this community include western sycamore, fremont and black cottonwood (*Populus fremontii* and *P. trichocarpa*), white alder (*Alnus rhombifolia*), California black walnut (*Juglans californica*), big-leaf maple (*Acer macrophyllum*), California bay laurel (*Umbellularia californica*), willows (*Salix* spp.), mule fat (*Baccharis salicifolia*), and smaller plants such as stream orchid (*Epipactis gigantea*), poison oak, California blackberry (*Rubus ursinus*), horsetails (*Equisetum* spp.), humboldt lily (*Lilium humboldtii*), and scarlet and creek monkeyflower (*Mimulus cardinalis* and *M. guttatus*).

- Mojave mixed woody scrub

Mojave mixed woody scrub occurs on rolling to steep hills with soils that are very shallow, overly-drained, and usually derived from granite. These sites have extremely low water-holding capacity, mild alkalinity, and are low in salinity. This community is characterized by the presence of Joshua tree (*Yucca brevifolia*), interior buckwheat (*Eriogonum fasciculatum polifolium*), and bladderpod (*Isomeris arborea*). Most of the constituent species also occur in other nearby communities such as Great Basin scrub, blackbush scrub, pinyon woodlands, and creosote bush scrub, including burro-weed (*Ambrosia dumosa*), saltbush, Mojave brickellbush (*Brickellia oblongifolia* var. *linifolia*), Kern County evening-primrose (*Camissonia kernensis*), green rabbit-brush (*Chrysothamnus teretifolius*), blackbrush (*Coleogyne ramosissima*), indigo brush (*Psorothamnus fremontii* var. *fremontii*), Nevada joint fir (*Ephedra nevadensis*), Mormon tea (*E. viridis*), interior goldenbush (*Ericameria linearifolia*), rock nettle (*Eucnide urens*), argus bedstraw (*Galium argense*), showy gilia (*Gilia cana*), hop-sage (*Grayia spinosa*), grape soda lupine (*Lupinus excubitus*), sand blazing star (*Mentzelia involucrata*), beavertail prickly pear (*Opuntia basilaris*), Charlotte's phacelia (*Phacelia nashiana*), desert bitterbrush (*Pursia tridentate* var. *glandulosa*), bladdersage (*Salazaria mexicana*), desert sage (*Salvia dorrii*), and cotton-thorn (*Tetradymia axillaris*). Mojave mixed woody scrub is scattered along the eastern base of the Sierra Nevada Mountains from the southwestern part of Owens Valley southward along the Tehachapi's, San Gabriel, San Bernardino, San Jacinto, and Peninsula ranges to northern Baja California between 610 and 1,524 m (2,000 and 5,000 ft) above sea level.

Sensitive Vegetation Communities

Sensitive vegetation communities are natural communities and habitats that are either unique, of relatively limited distribution in the region, of particularly high wildlife value, or provide habitat to rare or endangered species. These resources have been defined by federal, state, and local government conservation programs. The biological resources study area includes U.S. Geological Survey 7.5 minute quadrants containing proposed projects under the RTP. The CNDDB was used to identify sensitive vegetation communities located in the biological resources study area. Sensitive vegetation communities known to occur within the biological resources study area include alkali seep, coastal and valley freshwater marsh, Great Valley cottonwood riparian forest, Great Valley mesquite scrub,

stabilized interior dunes, valley needlegrass grassland, valley oak woodland, valley sacaton grassland, valley saltbush scrub, valley sink scrub, and wildflower field.

In addition, waters, wetlands and riparian communities may also be regulated by the ACOE, CDFG and the RWQCB as described previously under "Regulatory Setting."

- Alkali Seep

  Alkali seeps appear as low-growing perennial herb communities of desert saltgrass (*Distichlis spicata*), marine water nymph (*Najas marina*), boraxweed (*Nitrophila occidentalis*), Nevada pondweed (*Potamogeton latifolius*), Sago pondweed (*Potamogeton pectinatus*), ditchgrass (*Ruppia maritima*), or horned pondweed (*Zannichellia palustris*) which form relatively complete cover.

- Coastal and Valley Freshwater Marsh

  Freshwater marshes are highly productive environments that support many species of distinctive plants and animals. Freshwater marshes are semi-dry or wet areas of standing or slow-moving water habitats less than 152 m (500 ft) above mean sea level that are usually the result of water runoff from mountainous regions. Marshes in Southern California often dry-up or become quite confined during the dry season. Therefore, plants in this community must be tolerant of dry soils for at least part of the year. Common vegetation in these habitats include water cress (*Rorippa nasturtium-aquaticum*), the water smartweeds and knotweed (*Polygonum amphibium* and *punctatum*, *Polygonum arenastrum*), pond lily (*Nuphar luteum*), common cattail (*Typha latifolia*), yerba mansa (*Anemopsis californica*), western goldenrod (*Euthamia occidentalis*), biennial sagewort (*Artemisia biennis*), mosquito fern (*Azolla filicoides*), tall flatsedge (*Cyperus eragrostis*), and species of duckweed (*Lemna* spp.), tule (*Scirpus* spp.), sedge (*Carex* spp.), rush (*Juncus* spp.) and pondweed (*Potamogeton* spp.).

- Great Valley Cottonwood Riparian Forest

  Great Valley cottonwood riparian forests are characterized by a dense, broad-leaved, winter-deciduous riparian forest dominated by Fremont's cottonwood (Populus fremontii) and Gooding's willow (Salix gooddingii variabilis). The understory is usually dense consisting of juvenile Fremont's cottonwood and Gooding's willow. California wild grape (*Vitis californica*), buttonbush (*Cephalanthus occidentalis*), wild ryegrass (*Elymus triticoides*), sandbar willow (*Salix hindsiana*), red willow (*S. laevigata*), yellow willow (*S. lasiandra*) and red willow (*S. lasiolepis*) are also commonly present. Shade-tolerant species such as boxelder (*Acer negundo californica*) or Oregon ash (*Fraxinus latifolia*) may also occur, but frequent flooding prevents these species from reaching the canopy. Great Valley cottonwood riparian forests occur on fine-grained alluvial soils near perennial or nearly perennial streams.

- Great Valley Mesquite Scrub

  Great Valley mesquite scrub is characterized as an open woodland or savanna dominated by honey mesquite (*Prosopis glandulosa torreyana*) and allscale (*Atriplex polycarpa*). The understory is grassy and usually dominated by non-native annual species such as red brome (*Bromus rubens*). Great Valley mesquite scrub occurs on sandy loam soils of alluvial origin in areas with a high water table as a result of Sierran snowmelt.

- Stabilized Interior Dunes

  Stabilized interior dunes are characterized by winter- and spring-growing herbs with scatterings of low shrubs or coast live oak. Shrubs contribute to less than ten percent of landcover. Other characteristic species include California croton (*Croton californicus*), California matchweed (*Gutierrezia californica*), telegraph weed

(*Heterotheca grandiflora*), buckwheat (*Eriogonum* spp.), contra costa wallflower (*Erysimum capitatum* spp. *angustatum*), and Devil's lantern (*Oenothera deltoides*).

- Valley Needlegrass Grassland

Valley needlegrass grasslands are characterized by bunches of purple needlegrass (*Nassella pulchra*) with island pink yarrow (*Achillea borealis*), blow-wives (*Achyrachaena mollis*), false dandelion (*Agoseris heterophylla*), wild oats (*Avena fatua*), common goldenstar (*Bloomeria crocea*), golden brodiaea (*Triteleia ixiodes*), ripgut brome (*Bromus diandrus*), soft chess (*B. mollis*), red brome (*B. rubens*), soap plant (*Chlorogalum pomeridianum*), purple clarkia (*Clarkia purpurea*), California melic (*Melica californica*), chapparal oniongrass (*M. imperfecta*), shooting star (*Dodecatheon* spp.) valley tassels (*Castillea attenuate*), Plantain (*Plantago erecta*), one-sided bluegrass (*Poa scabrella*), and nodding needlegrass (*Nasella cernua*). Native and introduced annuals occur between the perennials and may actually exceed the bunchgrasses in cover. Soils are usually fine-textured clay that are moist or waterlogged during winter, but very dry in summer. Formerly extensive around the Sacramento, San Joaquin, and Salinas Valleys, as well as the Los Angeles Basin, valley needlegrass grasslands are now much reduced.

- Valley Oak Woodland

Valley Oak woodlands form grassy-understoried savannas rather than dense woodlands. Valley oak is usually the only tree present, though blue oak (*Q. douglasii*) may appear in addition to poison oak and creeping wild rye (*Leymus triticoides*). Valley oak, a winter-deciduous species, is California's largest broad-leaved tree and reaches heights of 15 to 35 m (49 to 115 ft) when mature. Valley oak communities thrive in deep, well-drained alluvial soils, usually in valley bottoms. They are also found in non-alluvial settings in the South Coast and Transverse ranges. The range of valley oak woodlands includes the Sacramento and San Joaquin Valleys adjacent to the Sierra Nevada foothills and valleys of the Coast Ranges from Lake County to western Los Angeles County, usually below 610 m (2,000 ft).

- Valley Sacaton Grassland

Valley Sacaton grassland is described as a tussock-forming grassland dominated by alkali dropseed (*Sporobolus airoides*). Other species may include desert saltgrass (*Distichlis spicata*) and dwarf barley (*Hordeum depressum*). Valley Sacaton grassland occurs on fine textured, poorly drained alkaline soils. Most sites have a high water table and/or are overflowed during winter flood events.

- Valley Saltbush Scrub

Valley saltbush scrub is characterized by open, gray, or blue-green chenopod scrubs (10 to 40 percent cover) with a low, herbaceous, annual understory. Cover types are dominated by alkali saltbush (*Atriplex polycarpa*) or spinescale (*A. spinifera*), with arrowscale (*A. phyllostegia*), Valley larkspur (*Delphinium recurvatum*), alkali heath (*Frankenia salina*), alkali golden bush (*Isocoma acradenia* ssp. *bracteosa*), bird's eyes (*Gilia tricolor*), common spikeweed (*Hemizonia pungens*), and cream cups (*Platystemon californicus*). Most perennials (except spinescale) flower from May through September. The annuals (and spinescale) are active from January through April. These communities are typically found on sandy to loamy soils without surface alkalinity; largely on rolling, dissected alluvial fans with low relief. Valley saltbush scrub occurs in the southern and southwestern San Joaquin Valley and the Carrizo Plains of San Luis Obispo County. This once extensive community is now essentially exterminated by agricultural conversion, flood control, and groundwater pumping.

- Valley Sink Scrub

  Valley sink scrub is characterized by low, open to dense succulent shrublands dominated by alkali-tolerant Chenopodiaceae, especially iodinebush (*Allenrolfea occidentalis*) or *Sueda* species. Valley sink scrub communities usually have no understory, though red brome (*Bromus rubens*) may occur. Other species may include recurved larkspur (*Delphinium recurvatum*), desert saltgrass (*Distichlis spicata*), rusty molly (*Kochia californica*), boraxweed (*Nitrophila occidentalis*), Parish's pickleweed (*Salicornia subterminalis*), alkali dropseed (*Sporobolus airoides*), shrubby seablite (*Sueda fructicosa*) and iodineweed (*S. torreyana*). Annual species are most visible between January and April while perennial species are more pronounced from March to September. Valley sink scrub occurs in heavy saline and/or alkaline clay soils of lakebeds or playas. High groundwater provides capillary water for perennial species. Soil surfaces often appear as a dark, sticky, clay soil overlain with a white salty crust.

- Wildflower Field

  Wildflower fields exist on droughty, nutrient-poor sites associated with grasslands or oak woodlands, which occur on adjacent, more productive sites. Wildflower fields are herb-dominated and produce annual wildflower displays. Dominance varies from site to site and from year to year at a particular site but may include California poppy (*Eschscholzia californica*), gilia (*Gilia* spp.), tidy tips (*Layia platyglossa*), miniature lupine (*Lupinus bicolor*), valley tassels and purple owl's clover (*Castilleja exserta*). The range of wildflower field includes valleys and foothills of the Californian floristic province except the north coast (too wet) and desert (too dry) regions below about 610 m (2,000 ft) in the north and 1,219 to 1,524 m (4,000 to 5,000 ft) in the south.

Wetlands

- Regulation of Activities in Wetlands

  The biological resources study area covers a diverse region that includes several types of waters and wetlands. These waters range from concrete-lined urban streams, reservoirs, and agricultural ditches, to natural rivers, desert washes, and mountain lakes. Lakes, rivers, streams, and other waterbodies are termed "jurisdictional waters" when they are protected by federal and/or state law. Special aquatic sites, which include wetlands, are considered an important subset of jurisdictional waters. State and federal resource agencies regulate activities that take place within or could impact jurisdictional waters and associated riparian resources. In order to identify jurisdictional features and define the jurisdictional limits, state and federal resource agencies have developed regulations (reference federal and state agencies listings under Regulatory Setting), which serve as legal definitions for jurisdictional waters and wetlands.

Sensitive Plant and Wildlife Species

The CNDDB provides an inventory of plant and animal species, as well as plant communities, which are considered sensitive by state and federal resource agencies, academic institutions and conservation groups such as the California Native Plant Society (CNPS). Tables 3-9 and 3-10 list the sensitive plant and wildlife species that are known to occur or potentially occur in the biological resources study area or in the immediate vicinity based on query of the database or the presence of suitable habitat and/or other requisite components. Known locations of these plant and wildlife species in relation to the proposed Project are shown in Figure 3-4.

TABLE 3-9
Sensitive Plant Species Known to Occur within the Biological Resources Study Area

Scientific Name	Common Name	Federal Status	State Status	CNPS
Vascular Plants				
Astragalus leucolobus	Big Bear Valley Woolypod	None	None	1B
Atriplex cordulata	Heartscale	SOC	None	1B
Atriplex coronata var. *notatior*	San Jacinto Valley Crownscale	Endangered	None	1B
Atriplex depressa	Brittlescale	SOC	None	1B
Atriplex erecticaulis	Earlimart Orache	SOC	None	1B
Atriplex minuscule	Lesser Saltscale	SOC	None	1B
Atriplex subtilis	Subtle Orache	SOC	None	1B
Atriplex tularensis	Bakersfield Smallscale	SOC	Endangered	1B
Atriplex vallicola	Lost Hills Crownscale	SOC	None	1B
Calochortus palmeri var. *palmeri*	Palmer's Mariposa Lily	SOC	None	1B
Calochortus striatus	Alkali Mariposa Lily	SOC	None	1B
Calycadenia villosa	Dwarf calycadenia	SOC	None	1B
Camissonia intergrifolia	Kern River Evening-primrose	None	None	1B
Caulanthus californicus	California Jewel-flower	Endangered	Endangered	1B
Caulanthus coulteri var. *lemmonii*	Lemmon's Jewel-flower	None	None	1B
Cirsium crassicaule	Slough Thistle	SOC	None	1B
Clarkia tembloriensis ssp. *calientensis*	Vasek's Clarkia	SOC	None	1B
Cymopterus deserticola	Desert Cymopterus	SOC	None	1B
Deinandra arida	Red Rock Tarplant	None	Rare	1B
Deinandra mohavensis	Mojave Tarplant	None	Endangered	1B
Delphinium purpusii	Kern County larkspur	None	None	1B
Delphinium recurvatum	Recurved Larkspur	SOC	None	1B
Eremalche kernensis	Kern Mallow	Endangered	None	1B
Ericameria gilmanii	Gilman's Goldenbush	None	None	1B
Erigeron aequifolius	Hall's Daisy	None	None	1B
Eriogonum temblorense	Temblor Buckwheat	SOC	None	1B
Eriophyllum lanatum var. *hallii*	Fort Tejon Woolly Sunflower	SOC	None	1B
Erodium macrophyllum	Round-leaved Filaree	None	None	2
Eryngium spinosepalum	Spiny-sepaled Button-celery	SOC	None	1B
Eschscholzia lemmonii ssp. *kernensis*	Tejon poppy	SOC	None	1B
Eschscholzia minutiflora ssp. *Twisselmannii*	Red Rock Poppy	SOC	None	1B
Fritillaria brandegeei	Greenhorn Fritillary	None	None	1B
Fritillaria striata	Striped Adobe Lily	SOC	Threatened	1B
Galium angustifolium ssp. onycense	Onyx Peak Bedstraw	None	None	1B
Heterotheca shevockii	Shevock's Golden-aster	None	None	1B
Lasthenia glabrata ssp. *coulteri*	Coulter's Goldfields	None	None	1B
Layia heterotricha	Pale-yellow Layia	SOC	None	1B
Layia leucopappa	Comanche Point Layia	SOC	None	1B
Layia munzii	Munz's Tidy-tips	SOC	None	1B
Lepidium jaredii ssp. *album*	Panoche Pepper-grass	SOC	None	1B
Lepidium jaredii ssp. *jaredii*	Jared's Pepper-grass	SOC	None	1B

TABLE 3-9
Sensitive Plant Species Known to Occur within the Biological Resources Study Area

Scientific Name	Common Name	Federal Status	State Status	CNPS
Loewflingia squarrosa var. *Artemisiarum*	Sagebrush Loeflingia (Owens Peak Desert Parsley)	None	None	2
Lomatium shevockii	Owens Peak Lomatium	SOC	None	1B
Madia radiate	Showy Madia	SOC	None	1B
Mentzelia tridentata	Creamy Blazing Star	None	None	1B
Mimulus pictus	Calico Monkeyflower	SOC	None	1B
Monardella beneolens	Sweet-smelling Monardella	None	None	1B
Monardella linoides ssp *oblonga*	Flax-like Monardella	SOC	None	1B
MonolopiaLembertia congdonii	San Joaquin Woolythreads	Endangered	None	1B
Navarretia peninsularis	Baja Navarretia	SOC	None	1B
Navarretia setiloba	Piute Mountains Navarretia	SOC	None	1B
Opuntia basilaris var. *treleasei*	Bakersfield Cactus	Endangered	Endangered	1B
Phacelia nashiana	Charlotte's Phacelia	SOC	None	1B
Phacelia novenmillensis	Nine Mile Canyon Phacelia	SOC	None	1B
Pseudobahia peirsonii	San Joaquin Adobe Sunburst	Threatened	Endangered	1B
Pterygoneurum californicum	California Chalk-moss	None	None	1B
Saltugila latimeri	Latimer's Woodland Gilia	None	None	1B
Stylocline citroleum	Oil Neststraw	SOC	None	1B
Stylocline masonii	Mason's Neststraw	SOC	None	1B
Symphyotrichum defoliatum	San Bernardino Aster	None	None	1B
Tortula californica	California Screw-moss	None	None	1B
Twisselmannia californica	Kings Gold	None	None	1B
Viola aurea	Golden Violet	None	None	2
Viola pinetorum ssp. *grisea*	Grey-leaved Violet	None	None	1B

Sources: CNDDB, September 2005 and February 2006 update. CNPS Online Inventory, March 2006.

TABLE 3-10
Sensitive Wildlife Species Known to Occur within the Biological Resources Study Area

Scientific Name	Common Name	Federal Status	State Status[1,2]
Snails and Slugs			
Helminthoglypta callistoderma	Kern Shoulderband	None	None
Helminthoglypta concolor	Whitefir Shoulderband	None	None
Pyrgulopsis greggi	Kern River Pyrg	None	None
Beetles			
Desmocerus californicus dimorphus	Valley Elderberry Longhorn Beetle	Threatened	None
Lytta hoppingi	Hopping's Blister Beetle	None	None
Lytta molesta	Molestan Blister Beetle	None	None
Bees			
Andrena macswaini	--	None	None

TABLE 3-10
Sensitive Wildlife Species Known to Occur within the Biological Resources Study Area

Scientific Name	Common Name	Federal Status	State Status[1,2]
Butterflies and Moths			
Danaus plexippus (roost trees)	Monarch Butterfly	None	None
Euphilotes battoides comstocki	Comstock's Blue Butterfly	None	CSC
Plebulina emigdiones	San Emigdio Blue Butterfly	None	None
Fish			
Gila bicolor	Mohave Tule Chub	Endangered	Endangered fully protected)
Lampetra hubbsi	Kern Brook Lamprey	None	CSC
Amphibians			
Ambystoma californiense	California Tiger Salamander	Threatened	CSC
Batrachoseps simatus	Kern Canyon Slender Salamander	SOC	Threatened
Batrachoseps stebbinsi	Tehachapi Slender Salamander	SOC	Threatened
Ensatina eschscholtzii croceator	Yellow-blotched Salamander	SOC	CSC
Rana aurora draytonii	California Red-legged frog	Threatened	CSC
Scaphiopus hammondii	Western Spadefoot	None	CSC
Reptiles			
Anniella pulchra pulchra	Silvery Legless Lizard	SOC	CSC
Charina bottae umbratica	Southern Rubber Boa	SOC	Threatened
Clemmys marmorata pallida	Southwestern Pond Turtle	SOC	CSC
Gambelia sila	Blunt-Nosed Leopard Lizard	Endangered	Endangered (fully protected)
Gopherus (Xerobates) agassizii	Desert Tortoise	Threatened	Threatened
Masticophis flagellum ruddocki	San Joaquin Whipsnake	None	CSC
Phrynosoma coronatum blainvillei	San Diego Horned Lizard	SOC	CSC
Phrynosoma coronatum frontale	Coast (California) Horned Lizard	None	CSC
Sauromalus obesus	Chuckwalla	None	None
Thamnophis gigas	Giant Garter Snake	Threatened	Threatened
Birds			
Accipiter cooperii	Cooper's Hawk	None	CSC
Agelaius tricolor	Tricolored Blackbird	None	CSC
Ardea alba	Great Egret	None	None
Athene cunicularia	Burrowing Owl	SOC	CSC
Buteo swainsoni	Swainson's Hawk	SOC	Threatened
Charadrius alexandrinus nivosus	Western Snowy Plover	Threatened	CSC
Charadrius montanus	Mountain Plover	None	CSC
Coccyzus americanus occidentalis	Western Yellow-Billed Cuckoo	None	Endangered
Dendocygna bicolor	Fulvous Whistling Duck	None	CSC
Dendroica petechia brewsteri	Yellow Warbler	None	CSC
Egretta thula	Snowy Egret	None	None

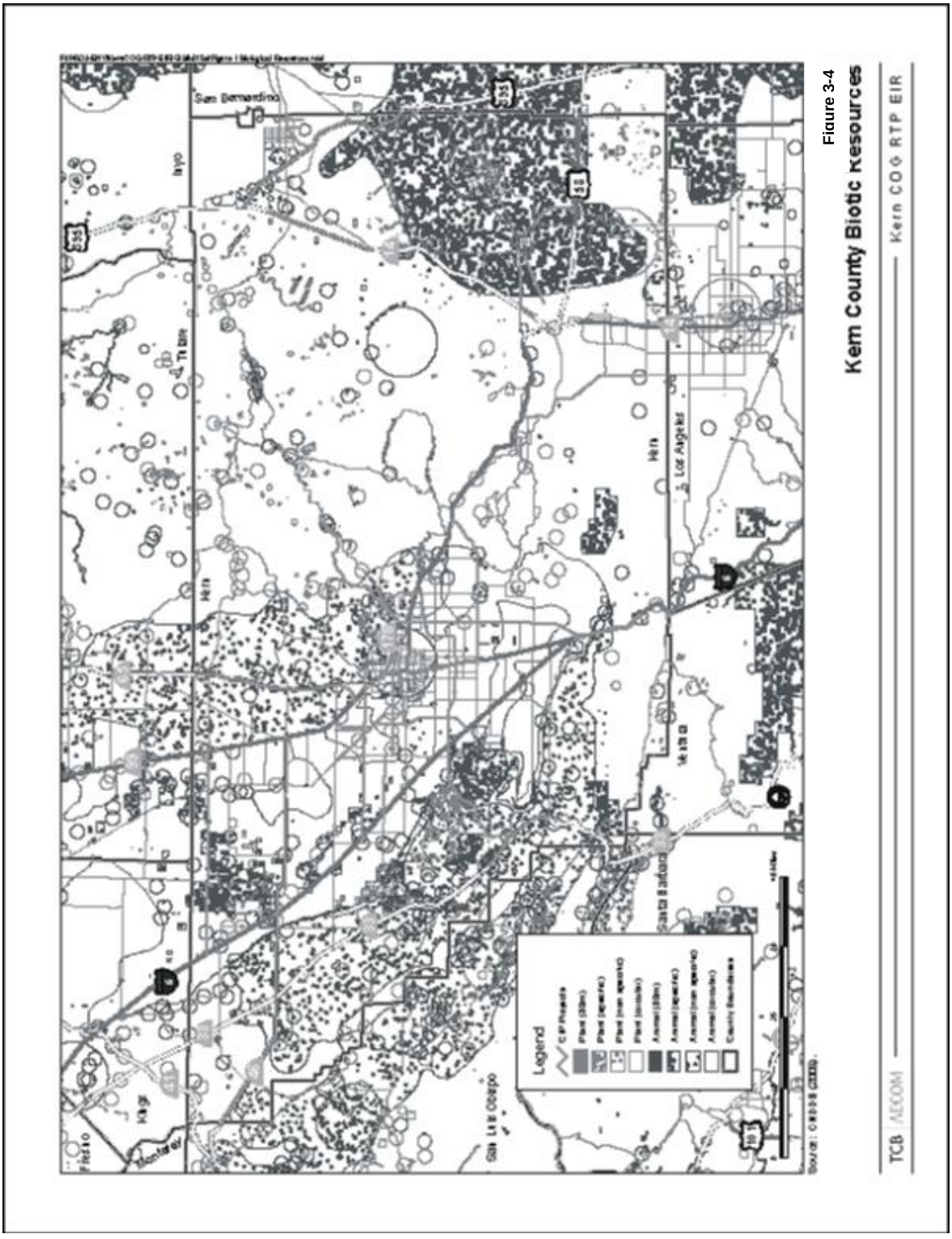
TABLE 3-10
Sensitive Wildlife Species Known to Occur within the Biological Resources Study Area

Scientific Name	Common Name	Federal Status	State Status[1,2]
Empidonax traillii (nesting)	Willow Flycatcher	SOC	Endangered
Empidonax traillii extimus (nesting)	Southwestern Willow Flycatcher	Endangered	Fully Protected
Eremophila alpestris actia	California Horned Lark	None	CSC
Falco mexicanus	Prairie Falcon	None	CSC
Gymnogyps californianus	California Condor	Endangered	Endangered
Icteria virens	Yellow-breasted chat	None	CSC
Piranga rubra	Summer Tanager	None	CSC
Plegadis chihi	White-faced Ibis	None	CSC
Toxostoma lecontei	Le Conte's Thrasher	None	CSC
Xanthocephalus xanthoecphalus	Yellow-headed Blackbird	None	None
Mammals			
Ammospermophilus nelsoni	San Joaquin Antelope Squirrel	None	Threatened
Antrozous pallidus	Pallid Bat	SOC	CSC
Corynorhinus townsendii	Townsend's Big-eared Bat	None	CSC
Dipodomys ingens	Giant Kangaroo Rat	Endangered	Endangered
Dipodomys nitratoides brevinasus	Short-nosed Kangaroo Rat	None	CSC
Dipodomys nitratoides nitratoides	Tipton Kangaroo Rat	Endangered	Endangered
Eumops perotis californicus	California Mastiff Bat	None	CSC
Myotis thysanodes	Fringed Myotis	None	None
Onychomys torridus tularensis	Tulare Grasshopper Mouse	None	CSC
Perognathus alticola inexpectatus	Tehachapi Pocket Mouse	SOC	CSC
Perognathus inornatus inornatus	San Joaquin Pocket Mouse	None	None
Perognathus parvis xanthonotus	Yellow-eared Pocket Mouse	None	None
Sorex ornatus relictus	Buena Vista Lake Shrew	Endangered	CSC
Spermophilus mohavensus	Mohave Ground Squirrel	None	Threatened
Taxidea taxus	American Badger	None	CSC
Vulpes macrotis mutica	San Joaquin Kit Fox	Endangered	Threatened

Sources: California Department of Fish and Game, 2005. California Natural Diversity Data Base, California Department of Fish and Game, Sacramento, CA.

[1] California Special Concern species: It is the goal and responsibility of the CDFG to maintain viable populations of all native species. To this end, the CDFG has designated certain vertebrate species as "Species of Special Concern" because of declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction. The goal of designating species as "Species of Special Concern" is to halt or reverse their decline by calling attention to their long term viability.

[2] The Fish and Game Code sections dealing with Fully Protected species state that these species "…may not be taken or possessed at any time and no provision of this coed or any other law shall be construed to authorize the issuance of permits of licenses to take any fully protected" species, although take may be authorized for necessary scientific research.


Kern County Biotic Resources
Figure 3-4
Kern COG RTP EIR
TCB | AECOM
Legend
San Bernardino
Inyo
Kern
Los Angeles
San Luis Obispo
Santa Barbara
Ventura
Kings

Wildlife movement/migration corridors link together areas of suitable wildlife habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. The fragmentation of open space areas by urbanization tends to create isolated islands of wildlife habitat. Several studies have shown that in the absence of habitat linkages, which facilitate wildlife movements between adjoining open space areas, some wildlife species, especially the larger and more mobile mammals, will not likely persist over time. This is because fragmentation and/or the isolation of habitat areas can prohibit the infusion of new individuals and genetic information (MacArthur and Wilson 1967; Soule 1987; Harris and Gallagher 1989; Bennett 1990). Wildlife corridors can often mitigate the effects of this fragmentation by (1) allowing animals to move between remaining habitats, thereby allowing depleted populations to be replenished; (2) providing escape routes from fire, predators, and human disturbances, thus reducing the risk that catastrophic events such as fire or disease will result in population or local species extinction; and (3) serving as travel routes for individual animals as they move within their home ranges in search of food, water, mates, and other needs (Noss 1983; Farhig and Merriam 1985; Simberloff and Cox 1987; Harris and Gallagher 1989).

Wildlife movement activities usually fall into one of three movement categories: (1) dispersal (defined as juvenile animals moving from natal areas and individuals extending range distributions); (2) seasonal migration; and (3) movements related to home range activities such as foraging for food or water; defending territories; or searching for mates, breeding areas, or cover). A number of terms have been used in various wildlife movement studies, such as wildlife corridor, travel route, habitat linkage, and wildlife crossing, to refer to areas in which wildlife move from one area to another. To clarify the meaning of these terms and facilitate the discussion on wildlife movement in this study, these terms are defined as follows:

- Travel route - a landscape feature such as a ridgeline, drainage, canyon, or riparian strip in a larger natural habitat area that is used frequently by animals to facilitate movement and provide access to necessary resources such as water, food, cover, and den sites. The travel route is generally preferred because it provides the least amount of topographic resistance in moving from one area to another; it contains adequate food, water, and/or cover between habitat areas; and it provides a relatively direct link between target habitat areas.

- Wildlife corridor - a piece of habitat, usually linear in nature that connects two or more habitat patches that would otherwise be fragmented or isolated from one another. Wildlife corridors are usually bounded by urban land or other areas unsuitable for wildlife. The corridor generally contains suitable cover, food, and/or water to support species and facilitate movement in the corridor. Larger, landscape-level corridors often referred to as habitat or landscape linkages, can provide both transitory and resident habitat for a variety of species.

Wildlife Movement

- Wildlife crossing - a small, narrow area, relatively short in length and generally constricted, that allows wildlife to pass under or through an obstacle or barrier that otherwise hinders or prevents movement. Crossings typically are manmade and include culverts, underpasses, drainage pipes, and tunnels to provide access across or under roads, highways, pipelines, or other physical obstacles. These often represent choke points along a movement corridor.

  Many of the open space areas in Kern County are currently large enough to support a variety of resident wildlife species and populations. These large habitat areas also occur adjacent to, or allow unrestricted access to, permanently designated open space areas in the region, including Los Padres National Forest, Sequoia National Forest and those areas previously identified in the Regulatory Setting as wildlife refuges and preserves. However, as development in the biological resources study area continues and the open spaces between the national forests and other open space areas become constrained, any remaining habitat links between the

forests and other permanent open space areas could become constrained and/or habitat could become fragmented.

Environmental Impacts, Mitigation Measures, and Significance After Mitigation

Methodology

- Sensitive Species and Habitat Determinations

  In general, the principal reason an individual taxon (species, subspecies or variety) is considered sensitive is the documented or perceived decline or limitation of its population size, or geographical extent and/or distribution resulting, in most cases, from habitat loss. Sources used to determine the sensitive status of biological resources are as follows:

  - Plants — CNDDB, 2009; and CNPS, 2006; California Department of Fish and Game 2006 and 2009;
  - Wildlife — CNDDB, 2009; California Department of Fish and Game 2009; and
  - Plant Communities — CNDDB, 2009; California Department of Fish and Game 2009.

- Wildlife crossing - a small, narrow area, relatively short in length and generally constricted, that allows wildlife to pass under or through an obstacle or barrier that otherwise hinders or prevents movement. Crossings typically are manmade and include culverts, underpasses, drainage pipes, and tunnels to provide access across or under roads, highways, pipelines, or other physical obstacles. These often represent choke points along a movement corridor.

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Environmental Impacts, Mitigation Measures, and Significance After Mitigation

Methodology

- Sensitive Species and Habitat Determinations

  Sensitive plant communities are vegetation assemblages, associations or subassociations that support concentrations of sensitive plant or wildlife species that are of relatively limited distribution, or are of particular value to wildlife. Sensitive habitats are not afforded specific legal protection unless they support protected species. However, potential impacts to sensitive habitats are important because they provide diversity and must be considered in the context of CEQA reporting requirements.

  The CNDDB provides an inventory of plant communities that are considered sensitive by state and federal resource agencies, academic institutions and conservation groups such as the CNPS. Determination of the level of sensitivity is based on the Nature Conservancy Heritage Program Status Ranks. This system ranks both species and plant communities on a global and statewide basis according to the number and size of remaining

occurrences, as well as recognized threats such as proposed development, habitat degradation, and invasion by non-native species.

Species of special concern (CSC) is an informal designation used by the CDFG for some declining wildlife species that are not considered threatened or endangered. This designation does not provide legal protection, but signifies that these species are recognized as sensitive by the CDFG.

The CNPS is a statewide resource conservation organization that has developed an inventory of California's sensitive plant species. This inventory is the summary of information on the distribution, rarity, and endangerment of California's vascular plants. This rare plant inventory is comprised of a series of list that rank rarity of plant species found in California. List 1B plants are considered rare, threatened or endangered throughout their range.

- Listed Species

A federally endangered species is defined as a species facing extinction throughout all or a significant part of its geographic range. A federally threatened species is defined as a species that is likely to become endangered within the foreseeable future throughout all or a significant part of its range. The State of California defines an endangered species as one whose prospects of survival and reproduction are in immediate jeopardy. A threatened species as one present in such small numbers throughout its range that it is likely to become an endangered species in the near future in the absence of special protection or management, and a rare species as one present in such small numbers throughout its range that it may become endangered if its present environment worsens. Rare species applies to California native plants.

Criteria For Significance

Implementation of the Project was determined to result in a significant adverse impact if it would exceed the CEQA thresholds defined below:

- The Project has 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 CDFG or the USFWS;
- The Project has a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies or regulations or by the CDFG or the USFWS;
- The Project has 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;
- The Project interferes substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impedes the use of native wildlife nursery sites;
- The Project conflicts with any local policies or ordinances protecting biological resources such as a tree preservation policy or ordinance; and
- The Project conflicts with the provisions of an adopted HCP, NCCP or other approved local, regional or state HCP.

Direct impacts to biological resources involve the temporary or permanent physical loss of vegetation communities, wildlife habitat, and special interest plant and wildlife species resulting from site preparation activities such as clearing, grubbing, and grading.

Indirect impacts on vegetation communities include the potential for increased susceptibility of adjacent, native habitats to invasion by non-native plant species. The establishment of non-native vegetation leads to increased competition between native and non-native vegetation for available resources and result in decreased native species diversity in adjacent, native habitats. Fugitive dust created during individual improvement project-related construction activities may settle on plants adjacent to the construction zone. This dust can at least temporarily result in reductions in plant photosynthesis, growth, and reproduction.

Short-term and long-term indirect impacts on special status species from the construction and operation of transportation facilities include edge effects such as noise and lighting. These impacts may be less than significant for improvement projects on already-existing transportation facilities because the types of operational impacts although potentially increased, would remain the same. Noise impacts will be most adverse during construction. However, these impacts are temporary in nature and are generally considered not significant.

Impact 3.4.1 – Construction Impacts

The Project includes individual improvement projects that may result in direct removal or degradation of riparian habitat or other sensitive natural communities during construction activities such as grading and grubbing.

Mitigation Measures

All mitigation measures will be included in subsequent individual improvement project-level environmental analysis as appropriate. The individual improvement project proponent or local jurisdiction will be responsible for compliance with the mitigation measures during all phases of construction as appropriate. Kern COG will be provided with documentation of compliance with mitigation measures.

- Construction and operational Best Management Practices (BMPs) will be identified, installed and maintained in order to prevent silt and other pollutants from entering jurisdictional waters and wetlands thereby degrading or destroying wildlife and/or natural habitat. BMPs may include straw bales and/or mats, temporary sedimentation basins, silt fence, sand bag check dams, dry season construction, etc;

- Native soils in construction areas will be removed, stockpiled separately, and replaced in those areas where onsite revegetation of the native habitat is planned;

- Any disturbed natural areas will be replanted with appropriate native vegetation following the completion of construction activities;

- During the individual improvement project design phase, impacts to jurisdictional waters and wetlands will be minimized to the greatest extent feasible and

- Individual improvement project proponents will obtain and comply with appropriate regulatory requirements prior to construction.

Significance After Mitigation

These mitigation measures would require individual improvement project proponents to avoid or mitigate impacts to sensitive habitat including jurisdictional waters and wetlands. However, due to the size and potentially large number of resources that could be disturbed as a result of the 2011 RTP, impacts to these resources would remain a potentially significant impact at a regional level.

Impact 3.4.2 – Direct Plant and Wildlife Impacts

The Project includes improvements that may result in direct impacts to plant and wildlife species including rare, threatened and/or endangered species during construction and operation of the proposed transportation facilities through the removal of native habitat.

Mitigation Measures

All mitigation measures will be included in subsequent individual improvement project-level environmental analysis as appropriate. The individual improvement project proponent or local jurisdiction will be responsible for compliance with the mitigation measures during all phases of construction as appropriate. Kern COG will be provided with documentation of compliance with mitigation measures.

- Each proposed individual improvement project will consider the displacement of sensitive habitat, sensitive species, and non-native habitat during the individual improvement project design phase.

- When avoidance of native vegetation removal is not possible, each transportation project shall replant disturbed areas with commensurate native vegetation of high habitat value adjacent to the project (i.e. as opposed to ornamental vegetation with relatively less habitat value).

- Focused sensitive plant and wildlife species and non-native habitat surveys will be conducted within suitable habitat to determine the distribution of sensitive species within the biological impact area of the proposed transportation improvement project. Sensitive plant and non-native habitat surveys will be conducted during the appropriate flowering season for sensitive plant species with the potential to occur within the individual improvement project area. In all cases, impacts on special status species and/or their habitat shall be avoided during construction to the extent feasible.

- If sensitive plant or wildlife species and non-native habitat are identified within the biological impact area, a Biological Resource Management Plan (BRMP) will be developed to address appropriate avoidance and minimization measures. These measures may include seed collection and salvage measures for sensitive plant species and non-native habitat, silt fencing, exclusion fencing and/or appropriate compensation where impacts cannot be fully avoided.

- Individual transportation projects shall include offsite habitat enhancement or restoration to compensate for unavoidable habitat losses from the project site.

- Locations of sensitive species, sensitive habitat, and non-native habitat will be mapped and shown on construction drawings and identified as Environmentally Sensitive Areas (ESAs). Prior to construction, these areas will be flagged and/or fenced to prevent unnecessary impacts from machinery and foot traffic.

- Temporary access roads and staging areas will not be located within areas containing sensitive plant, sensitive wildlife species or non-native habitat wherever feasible, so as to avoid or minimize impacts to these species.

- Construction activities will be scheduled, as appropriate and feasible, to avoid sensitive times that have a greater likelihood to affect significant resources such as spawning periods for fish, nesting season for birds and/or the rainy season for riparian habitat and sediment/erosion control.

- All vegetation (including tall grasses) will be removed between August 16 and February 14, if possible, to avoid potential conflicts with nesting birds. If it is not possible to remove vegetation during that time frame, a nest

clearance survey will be completed prior to vegetation clearing. Any detected nests will be mapped and provided with an appropriate buffer as recommended by a qualified biologist. Construction activities within the buffer area will not be allowed until after September 15 or until fledglings have abandoned the nest.

- A Worker Awareness Program (environmental education) shall be developed and implemented to inform project workers of their responsibilities in regards to avoiding and minimizing impacts on sensitive biological resources.

- An Environmental Inspector shall be appointed to serve as a contact for issues that may arise concerning implementation of mitigation measures, and to document and report on adherence to these measures.

- A qualified wetland scientist shall review construction drawings as part of each project-specific environmental analysis to determine whether wetlands will be impacted, and if necessary perform a formal wetland delineation. Appropriate state and federal permits shall be obtained, but each project EIR will contain language clearly stating the provisions of such permits, including avoidance measures, restoration procedures, and in the case of permanent impacts compensatory creation or enhancement measures to ensure a no net loss of wetland extent or function and values.

- Sensitive habitats (native vegetative communities identified as rare and/or sensitive by the CDFG) and special-status plant species (including vernal pools) impacted by projects shall be restored and augmented, if impacts are temporary, at a 1.1:1 ratio (compensation acres to impacted acres). Permanent impacts shall be compensated for by creating or restoring habitats at a 3:1 ratio as close as possible to the site of the impact.

- When work is conducted in identified sensitive habitat areas and/or areas of intact native vegetation, construction protocols shall require the salvage of perennial plants and the salvage and stockpile of topsoil (the surface material from 6 to 12 inches deep) and shall be used in restoring native vegetation to all areas of temporary disturbance within the project area.

- If specific project area trees are designated as “Landmark Trees” or “Heritage Trees”, then approval for removals shall be obtained through the appropriate entity, and appropriate mitigation measures shall be developed at that time, to ensure that the trees are replaced. Due to the close proximity of these areas to sensitive wildlife habitats, all mitigation trees will use only locally-collected native species.

- Use resource data to inform transportation decision-making.

- Use watershed, conservation, and recovery plans to identify important environmental considerations for the Kern COG region, such as critical wildlife corridors, the most important areas to protect for sensitive species, and areas with a high concentration of resources.

- Give conservation plans as much weight as General Plans when planning transportation investments.

- Incorporate concepts such as 100 to 200 foot buffers for stream corridors, and identification and improvement of priority culverts that currently restrict wildlife corridors and natural processes of stream and river systems.

- Use parcel maps to identify larger, undivided parcels for ease of acquisition and preservation, and designate areas as potential future mitigation sites.

- Consider the resource, “Eco-logical: An Ecosystem Approach to Developing Infrastructure Projects” (2006) which encourages Federal, State, Tribal and Local partners involved in the infrastructure planning, design, review, and construction to use flexibility in regulatory processes.

- Identify financial mechanisms to fund mitigation, such as development fees, sales tax, or the use of funds from alternative methods to identify and protect critical resource areas.

- Establish conservation easements that connect to and expand existing conservation areas.

- Describe locally-developed measures such as designated open space, measures requiring development set-backs near streams, etc.

- The following list of data resources should be referenced during development of biotic plans and studies for transportation improvement projects:

  - U.S. Fish & Wildlife Service species recovery plans;
  - USDA Natural Resources Conservation Service wetland data;
  - Nature Conservancy data and regional planning documents;
  - California Department of Fish and Game Natural Diversity Database; and
  - Local non-profit and land trust group information.

Significance After Mitigation

This impact would likely be significant if the proposed individual improvement project occurs within or near known populations of sensitive plant and wildlife species, or within designated critical habitat for federal or state listed species. These mitigation measures would require individual improvement project proponents to avoid or mitigate impacts to sensitive plant and wildlife species. However, due to the size and potentially large number of resources that could be disturbed as a result of the Individual improvement project, impacts to these resources would remain a potentially significant impact at a regional level.

Impact 3.4.3 – Indirect Impacts

The Project includes improvements that may result in indirect impacts to plant and wildlife species including rare, threatened and/or endangered species during the construction and operation through edge effects such as noise, lighting and visual deterrents.

Mitigation Measures

All mitigation measures will be included in subsequent individual improvement project-level environmental analysis as appropriate. The individual improvement project proponent or local jurisdiction will be responsible for compliance with the mitigation measures during all phases of construction as appropriate. Kern COG will be provided with documentation of compliance with mitigation measures.

The height, spacing, number and type of light fixtures will be selected and installed to minimize intrusive light escaping from the physical boundaries of the site.

- Road noise minimization methods such as native brush and tree planting adjacent to heavy noise producing transportation facilities or will be incorporated where feasible.

Significance After Mitigation

This impact would likely be significant if the proposed individual improvement project occurs within or near known populations of sensitive plant and wildlife species, or within designated critical habitat for federal or state listed species. These mitigation measures would require individual improvement project proponents to avoid or mitigate

impacts to sensitive plant and wildlife species. However, due to the size and potentially large number of resources that could be disturbed as a result of the Project, impacts to these resources would remain a potentially significant impact at a regional level.

Impact 3.4.4 – Temporary and Permanent Impacts

The Project includes individual improvement projects that would result in temporary and permanent impacts to terrestrial and aquatic wildlife movement.

The linear nature of transportation projects increases the potential extent and significance of impacts to wildlife movement. Transportation facilities pose barriers to wildlife crossings that may result in injury of death of wildlife attempting to traverse the facility. These barriers also result in fragmentation of natural habitat and increased impacts associated with edge effects from lighting, noise, human disturbance, exotic plant infestations, urban runoff, etc. Smaller fragments of habitat result in greater intensity of the edge effects. It is also important to maintain connections between populations of wildlife so that interbreeding, which results and/or that young have no ability to disperse to suitable habitats, does not occur. Impacts to wildlife movement would be greater along entirely new transportation facilities than with improvements to existing facilities, because the existing facility has already formed a barrier and the addition of new lanes for example, may only slightly increase the barrier effect.

Mitigation Measures

All mitigation measures will be included in subsequent individual improvement project-level environmental analysis as appropriate. The individual improvement project proponent or local jurisdiction will be responsible for compliance with the mitigation measures during all phases of construction as appropriate. Kern COG will be provided with documentation of compliance with mitigation measures.

- During final design, implementing agencies, will design, construct, and maintain terrestrial wildlife crossings in order to minimize barrier effects and habitat fragmentation created by the transportation improvement project.

- During final design, implementing agencies, will design, construct, and maintain any structure/culvert placed within a stream where endangered or threatened fish occur/may occur. The structure/culvert will not constitute a barrier to upstream or downstream movement of aquatic life, or cause an avoidance reaction by fish that impedes their upstream or downstream movement. This includes, but is not limited to, the supply of water at an appropriate depth for fish migration.

Significance After Mitigation

These mitigation measures would require individual improvement project proponents to avoid or mitigate impacts to wildlife movement. However, due to the size and potentially large number of movement corridors that could be disturbed as a result of the Project, impacts to these resources would remain a potentially significant impact at a regional level.

Impact 3.4.5 – Conflicts with HCP, NCCP or Other HCP Impacts

The Project includes individual improvement projects that potentially conflict with an adopted HCP, NCCP or other approved local, regional or state HCP.

Mitigation Measure

All mitigation measures will be included in subsequent individual improvement project-level environmental analysis as appropriate. The individual improvement project proponent or local jurisdiction will be responsible for compliance with the mitigation measures during all phases of construction as appropriate. Kern COG will be provided with documentation of compliance with mitigation measures.

- Construction and operation of the proposed transportation individual improvement project will comply with the requirements of all adopted HCPs and other preserved areas.

Significance After Mitigation

With the incorporation of the mitigation measure listed above, this impact would be less than significant.

Impact 3.4.6 – Increased Siltation Impacts

The 2011 RTP would potentially increase siltation of streams and other water resources from exposures of erodible soils during construction activities. Excessive siltation can significantly degrade habitat for fish and other aquatic organisms. Heavy sediment deposition can bury slow-moving or sessile bottom-dwelling organisms, fish eggs and larval forms of many aquatic organisms. These losses are not only of direct concern, but also represent a loss of food sources for larger fishes and other organisms, such as birds and mammals, that are not directly affected by sediments.

Increased sediment can also decrease light penetration for aquatic plant production and increase water temperature from greater insulation. Higher water temperatures can affect aquatic organisms through direct stress of temperature-sensitive organisms (e.g., steelhead require cold water streams), and by increasing nitrate productivity which can exacerbate eutrophication if the sediments contain or are accompanied by excessive nutrients (i.e., algal blooms). The degree of this impact would depend on several factors including the following:

- *Length of occurrence.* The longer the period of sedimentation, the greater the potential for significance.
- *Timing of occurrence*. The effect would be of greater significance during particularly sensitive times of year, such as during fish spawning seasons when the eggs and larvae which are particularly sensitive to siltation would be present; and,
- *Significance of Resource.* The effect would be of greater significance where a special status species might be affected, such as near a steelhead spawning stream.

This impact would be significant.

Mitigation Measures

- Individual projects near water resources shall implement Best Management Practices (BMPs) at construction sites to minimize erosion and sediment transport from the area. BMPs include encouraging growth of vegetation in disturbed areas, using straw bales or other silt-catching devices, and using settling basins to minimize soil transport.

- Individual projects shall schedule construction activities to avoid sensitive times for biological resources (e.g. steelhead spawning periods during the winter and spring) and to avoid the rainy season when erosion and sediment transport is increased.

Significance After Mitigation

Full implementation of each of these mitigation measures would not avoid the siltation impacts. The impact remains significant.

Cumulative Impacts 3.4.7

Growth and development in Kern County will increase substantially by 2035. The 2011 RTP, by increasing mobility and including transportation measures, influences the pattern of this growth and development. The 2011 RTP's influence on growth potentially contributes to following regional cumulatively considerable impacts:

- Displacement of natural vegetation,
- Damage to sensitive species habitat,
- Habitat fragmentation,
- Impacts to riparian and wetland habitats,
- Construction and operational disturbances, and
- Siltation.

The amount of new developed acreage (consuming previously vacant land) would be considerable. This degree of development is reasonably foreseeable; however, to assign this future development to precise locations would be speculative, such that it cannot be estimated which natural vegetation communities would be affected. Despite the inability to predict the acreage of each habitat type that may be affected, it is reasonable to expect that this future development would contribute to the same types (although on a larger scale) of impacts detailed in Impacts 3.4.1 through 3.4.6 above.

These indirect impacts on biological resources are associated with population, employment, and household growth forecast by Kern COG, and they are considered a significant cumulative impact.

Mitigation Measures

The cumulative impacts to biological resources, due to the forecast urban development associated with the 2011 RTP, would be mitigated using the same measures detailed for Impacts 3.4.1 through 3.4.6, in addition to the following measure.

- Future impacts to biotic resources shall be minimized through cooperation and information sharing between the implementation agency and affected resource agencies.

Significance After Mitigation

The impacts to biotic resources due to regional scale growth would be reduced through application of the mitigation measures, however implementation of the 2011 RTP's transportation improvement projects to accommodate growth and development in Kern County (as reflected in adopted local agency general plans) would contribute to biotic resource impacts. Impacts to biotic resources from the 2011 RTP would be cumulatively considerable.

3.5 CLIMATE CHANGE

This section includes a discussion of global climate change, its causes and the contribution of human activities, as well as a summary of existing greenhouse gas emissions. This section also describes the criteria for determining the significance of climate change impacts, and estimates the likely greenhouse gas emissions that would result from vehicular traffic and other emission sources related to the Project. Where appropriate, mitigation measures are recommended to reduce project-related impacts.

Environmental Setting

Climate refers to any significant change in measures of climate (such as temperature, precipitation, or wind) lasting for an extended period (decades or longer). Global Climate Change (GCC) means a shift in the climate of the earth as a whole that occurs naturally as in the case of the ice age. According to California Air Resources Board (CARB), the climate change that is occurring today differs from previous climate changes in both time and scale.

Gases that catch heat in the atmosphere are regularly called greenhouse gases (GHGs). The Earth's surface temperature would be about 61 degrees Fahrenheit colder than it is currently if it were not for the innate heat trapping effect of GHGs. The buildup of these gases in the earth's atmosphere is considered the source of the observed increase in the earth's temperature (global warming). Some greenhouse gases such as carbon dioxide occur naturally in nature and are emitted to the atmosphere through natural processes and as well as through anthropocentric activities. Other GHGs (e.g., fluorinated gases) are created and emitted solely through human activities.

Since the Industrial Revolution (circa 1750), global concentrations of carbon dioxide (CO_2) have risen about 36%, chiefly due to the burning of fossil fuels. Questions remain about the amount of warming that will occur, how rapidly it will occur, and how the warming will affect the rest of the climate system including weather events.

The United Nations Intergovernmental Panel on Climate Change constructed several emission trajectories of GHGs needed to stabilize global temperatures and climate change impacts. The Panel concluded that a stabilization of GHGs at 400 to 450 parts per million (ppm) CO_2 equivalent concentration is required to keep global mean warming below 3.6º Fahrenheit (2º Celsius). This is presumed necessary to avoid dangerous climate change (Association of Environmental Professionals, 2007).

State law defines greenhouse gases as any of the following compounds: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur hexafluoride (SF_6) (California Health and Safety Code Section 38505(g).) CO_2, followed by CH_4 and N_2O, are the most common GHGs that result from human activity. The characteristics of state defined GHGs are described below:

- Carbon dioxide – CO_2 results from fossil fuel combustion in stationary and mobile sources. It contributes to the greenhouse effect, but not to stratospheric ozone depletion. In 2004, CO_2 accounted for approximately 84 percent of total GHG emissions in the state (CEC, 2006);

- Methane – CH_4 can also be divided into anthropogenic (i.e., resulting from human activities and/or processes) and natural sources. Anthropogenic sources include rice agriculture, livestock, landfills, and waste treatment, some biomass burning, and fossil fuel combustion. Natural sources are wetlands, oceans, forests, fire, termites and geological sources. Anthropogenic sources currently account for more than 60 percent of the total global emissions; and

- Other regulated GHGs include Nitrous Oxide (N_20), Sulfur Hexafluoride (S_6), Hydrofluorocarbons (HFC), and Perfluorocarbons (PFC) - These gases all possess heat-trapping characteristics that are greater than CO_2. Emission sources of nitrous oxide gases include, but are not limited to, waste combustion, waste water treatment, fossil fuel combustion, and fertilizer production. Because the volume of emissions is small, the net effect of nitrous oxide emissions relative to CO_2 or CH4 is relatively small. SF6, HFC, and PFC emissions occur at even lower rates.

Over the last 200 years, human activities have caused substantial quantities of GHGs to be released into the atmosphere. These extra emissions are increasing GHG concentrations in the atmosphere, and enhancing the natural greenhouse effect, which is believed to be causing global warming. While manmade GHGs include naturally-occurring GHGs such as CO_2, methane, and N_2O, some gases, like HFCs, PFCs, and SF_6 are completely new to the atmosphere.

Certain other gases, such as water vapor, are short-lived in the atmosphere. Others remain in the atmosphere for significant periods of time, contributing to climate change over the long term. 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.

Globally, climate change has the potential to impact numerous environmental resources through potential, though uncertain, impacts related to future air temperatures and precipitation patterns. Scientific modeling predicts that continued GHG at or above current rates would induce more extreme climate changes during the 21st century than were observed during the 20th century. A warming of about 0.2°C (0.36° Fahrenheit) per decade is projected, and there are identifiable signs that global warming is taking place, including substantial ice loss in the Arctic.

However, the understanding of GHG emissions, particulate matter, and aerosols on global climate trends remains uncertain. In addition to uncertainties about the extent to which human activity rather than solar or volcanic activity is responsible for increasing warming, there is also evidence that some human activity has cooling, rather than warming, effects, as discussed in detail in numerous publications by the International Panel on Climate Change (IPCC), namely "Climate Change 2001, The Scientific Basis"(2001).

Climate change modeling shows that further warming could occur, which would induce additional changes in the global climate system during the current century. Changes to the global climate system, ecosystems, and the environment of California could include, but are not limited to:

GHGs have the potential to affect the environment because such emissions are believed to contribute cumulatively to global climate change. Although GHG emissions from one single project will not by themselves cause global climate change, it is thought that GHG emissions from multiple projects, past, present and future throughout the world may collectively result in a cumulative impact with respect to global climate change. It is speculated that global climate change could contribute to rising sea levels, which can inundate low-lying areas; impact rainfall and snowfall, which could change water supply, affect habitat which could affect biological resources, along with other unknown effects.

The consumption of nonrenewable energy (primarily gasoline and diesel fuel) associated with construction activities and the operation of passenger, public transit, and commercial vehicles results in GHG emissions that cause global climate change. In addition, alternative fuels like natural gas including CNG and liquified natural gas (LNG), ethanol, and electricity (unless derived from solar, wind, nuclear, or another energy source that does not produce carbon emissions) also result in GHG emissions and contribute to global climate change.

Climate models indicate that temperatures in California may rise by 4.7°F to 10.5°F by the end of the century if GHG emissions continue to proceed at a medium or high rate (CEC, 2006). Lower emission rates would reduce the projected warming to 3.0°F to 5.6° Fahrenheit . Almost all climate scenarios include a continuing trend of warming

through the end of the century given the amounts of GHGs already released, and the difficulties associated with reducing emissions to a level that would stabilize the climate. Total GHG emissions in California have been approximated by CARB, which found that 468 MMT of CO_2E GHG emissions were produced in California in 2004. CARB also found transportation to be the source of 38 percent of the State's GHG emissions; followed by electricity generation at 25 percent and industrial sources at 20 percent.

Global climate change is a problem caused by cumulative worldwide GHG emissions. Mitigating global climate change will require worldwide solutions. Combined gases in the earth's GHGs plays a critical role in the earth's radiation budget by trapping infrared radiation emitted from its surface, which otherwise could have escaped to space. Prominent GHGs contributing to this process include water vapor, carbon dioxide, methane, ozone, nitrous oxide, and certain fluorocarbons. This phenomenon, known as the "greenhouse effect", keeps the earth's atmosphere near the surface warmer than it would be under other circumstances. Increases in these gases leads to higher radiation absorption, thereby warming the lower atmosphere and increasing evaporation rates and temperatures near the surface.

Emissions of the GHGs in excess of natural ambient concentrations are thought to be responsible for enhancing the greenhouse effect and contribute to what is termed "global warming", or the unnatural warming of the earth's natural climate. Climate change is a global problem, and GHGs are global pollutants, unlike criteria air pollutants (such as ozone precursors). Worldwide, California is the 12th to 16th largest emitter of carbon dioxide (CO_2), according to the California Energy Commission (CEC), and is responsible for approximately 2% of the world's CO_2 emissions.

The Intergovernmental Panel on Climate Change (IPCC) was established by the World Meteorological Organization and United Nations Environment Programme to assess scientific, technical, and socioeconomic information to further understand climate change, its potential impacts, and options for adaptation and mitigation. The IPCC predicts substantial increases in temperatures globally of between 1.1 to 6.4 degrees Celsius, depending on the scenario studied. This may impact California's natural environment in the following ways:

- Rising sea levels along the California coastline, particularly in the San Francisco Bay Area and within the San Joaquin Delta because of ocean expansion;
- Extreme-heat conditions, such as heat waves and very high temperatures, which could last longer and become more frequent;
- An increase in heat-related human deaths, infectious diseases, and a higher risk of respiratory problems caused by deteriorating air quality;
- Reduced snow pack and stream flow in the Sierra Nevada mountains, affecting winter recreation and water supplies;
- Potential increases in the severity of winter storms, affecting peak stream flows and flooding;
- Changes in growing season conditions that could affect California agriculture, causing variations in crop quality and yield;
- Changes in the distribution of plant and wildlife species because of changes in temperature, competition from colonizing species, changes in hydrologic cycles, changes in sea levels, and other climate-related effects;
- Increase in the number of days conducive to ozone formation by 25 to 85 percent (depending on the future temperature scenario) in high ozone areas of Los Angeles and the San Joaquin Valley by the end of the 21st century; and
- High potential for erosion of California's coastlines and seawater intrusion into the Delta and levee systems due to the rise in sea level.

Changes in California's climate and ecosystems are occurring at a time when the State's population is expected to increase from 34 to 59 million by 2040, according to the CEC. The current inventory covers the years 1990 to 2004, and is summarized in Table 3-11. As such, the number of people potentially affected by climate change, as well as

the amount of anthropogenic GHG emissions expected under a "business as usual" scenario, is expected to increase.

TABLE 3-11
State of California GHG Emissions by Sector[1]

SECTOR	TOTAL 1990 EMISSIONS (MMT CO_2E[2])	PERCENT OF TOTAL 1990 EMISSIONS	TOTAL 2004 EMISSIONS ($MMTCO_2E$)	PERCENT OF TOTAL 2004 EMISSIONS
Agriculture	23.4	5%	27.9	6%
Commercial	14.4	3%	12.8	3%
Electricity Generation	110.6	26%	119.8	25%
Forestry	0.2	<1%	0.2	<1%
Industrial	103.0	24%	96.2	20%
Residential	29.7	7%	29.1	6%
Transportation	150.7	35%	182.4	38%
Forestry Sinks (Absorption)	(6.7)		(4.7)	
Total	432	100%	468	100%

[1]Source: Staff Report – California 1990 Greenhouse Gas Emissions Level and 2020 Emissions Limit, California Air Resources Board, November 16, 2007.
[2]MMT CO_2E refers to million metric tons of CO_2 equivalent emissions.

Emissions of carbon dioxide and nitrous oxide are byproducts of fossil fuel combustion, among other sources. Methane, a highly potent GHG, results from off-gassing associated with agricultural practices and landfills, among other sources. Sinks of carbon dioxide include uptake by vegetation and dissolution into the ocean.

Regulatory

Federal

In 1988, the United Nations established the Intergovernmental Panel on Climate Change to assess the impacts of global warming and to develop strategies that nations could apply to curb global climate change. In 1992, the United States joined other countries around the world in signing the United Nations' Framework Convention on Climate Change treaty with the goal of controlling greenhouse gas emissions.

As a result, the Climate Change Action Plan was developed to address reduction of greenhouse gases in the United States. The plan is comprised of more than 50 voluntary programs.

Additionally, the Montreal Protocol was first signed in 1987 and considerably amended in 1990 and 1992. The Montreal Protocol instructs that the production and consumption of compounds that deplete ozone in the stratosphere--chlorofluorocarbons (CFCs), halons, carbon tetrachloride, and methyl chloroform--were to be phased out by 2000 (2005 for methyl chloroform).

Recently, in *Massachusetts v. EPA* (April 2, 2007), the U.S. Supreme Court held that GHGs fall within the Clean Air Act's definition of an "air pollutant" and directed the EPA to deem whether GHGs are affecting climate change. The

EPA must regulate GHG emissions from automobiles under the Clean Air Act if it is determined GHGs do affect climate change. Currently, the EPA has not yet begun rule-making proceedings to judge whether GHGs are contributing to climate change.

In addition, Congress has enlarged the corporate average fuel economy (CAFE´) of the U.S. automotive fleet. In December 2007, President George W. Bush signed a bill increasing the minimum average miles per gallon for cars, sport utility vehicles and light trucks to 35 miles per gallon by 2020. This rise in CAFE´ standard will result in a significant reduction in GHG emissions from automobiles; the largest single emitting GHG group in California.

On April 17, 2009, EPA issued its proposed endangerment finding for GHG emissions. EPA is proposing to find that greenhouse gases in the atmosphere endanger the public health and welfare of current and future generations. Concentrations of greenhouse gases are at unprecedented levels compared to the recent and distant past. EPA has stated that these high atmospheric levels are the unambiguous result of human emissions, and are very likely the cause of the observed increase in average temperatures and other climatic changes. The effects of climate change observed to date and projected to occur in the future – including but not limited to the increased likelihood of more frequent and intense heat waves, more wildfires, degraded air quality, more heavy downpours and flooding, increased drought, greater sea level rise, more intense storms, harm to water resources, harm to agriculture, and harm to wildlife and ecosystems – are effects on public health and welfare within the policies of the CAA.

The U.S. EPA annually publishes the *Inventory of U.S. Greenhouse Gas Emissions and Sinks* for estimating sources of GHGs that is generally consistent with the IPCC methodology developed in its *Guidelines for National Greenhouse Gas Inventories*.

- Energy Policy and Conservation Act

  The Energy Policy and Conservation Act of 1975 sought to ensure that all vehicles sold in the U.S. would meet certain fuel economy goals. Through this Act, Congress established the first fuel economy standards for on-road motor vehicle in the U.S. Pursuant to the Act, the National Highway Traffic and Safety Administration, as a part of the USDOT, is responsible for establishing additional vehicle standards and for revising existing standards.

State

Various statewide and local initiatives to reduce California's contribution to GHG emissions have raised awareness that, even though the various contributors to and consequences of global climate change are not yet fully understood, global climate change is occurring. Every nation emits GHGs; therefore, global cooperation will be required to reduce the rate of GHG emissions. Currently no state regulations have been adopted in California that establish ambient air quality standards for GHGs; however, California has passed legislation directing CARB to develop actions to reduce GHG emissions.

- Assembly Bill 1493 (Pavley)

  California Assembly Bill 1493 (Pavley) enacted on July 22, 2002, required the CARB to develop and adopt regulations that reduce greenhouse gases emitted by passenger vehicles and light duty trucks. Regulations adopted by CARB would apply to 2009 and later model year vehicles. CARB estimated that the regulation would reduce climate change emissions from light duty passenger vehicles by an estimated 18 percent in 2020 and by 27 percent in 2030 (AEP 2007). In 2005, the CARB requested a waiver from EPA to enforce the regulation, as required under the Clean Air Act. Despite the fact that no waiver had ever been denied over a 40-year-period, the then Administrator of the EPA sent Governor Schwarzenegger a letter in December, 2007, indicating he had denied the waiver. On March 6, 2008 the waiver denial was formally issued in the Federal

Register. Governor Schwarzenegger and several other states immediately filed suit against the federal government to reverse that decision. On January 21, 2009, CARB requested that EPA reconsider denial of the waiver. EPA scheduled a re-hearing on March 5, 2009 and is considering the case.

- Executive Order S-3-05

Governor Schwarzenegger established Executive Order S-3-05 in 2005. This Executive Order set forth a series of target dates by which statewide emissions of GHGs would be progressively reduced, as follows:

- By 2010, reduce GHG emissions to 2000 levels;
- By 2020, reduce GHG emissions to 1990 levels; and
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

The executive order directed the Secretary of the California Environmental Protection Agency (Cal/EPA) to coordinate a multi-agency effort to reduce GHG emissions to the target levels. The Secretary will also submit biannual reports to the Governor and Legislature describing the progress made toward the emissions targets, the impacts of global climate change on California's resources, and mitigation and adaptation plans to combat these impacts. To comply with the Executive Order, the Cal/EPA Secretary created the Climate Action Team (CAT), made up of members from various State agencies and commissions. The team released its first report in March 2006, which proposed to achieve the targets by building on the voluntary actions of California businesses, local governments, and communities and through State incentive and regulatory programs.

- Assembly Bill 32 (California Global Warming Solutions Act of 2006)

California passed the California Global Warming Solutions Act of 2006 (AB 32; California Health and Safety Code Division 25.5, Sections 38500 - 38599), which established regular reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and establishes a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. This reduction will be accomplished by enforcing a statewide cap on GHG emissions that will be phased in starting in 2012. To effectively implement the cap, AB 32 directs CARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles. However, AB 32 also includes language stating that if the AB 1493 regulations cannot be implemented, then CARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

AB 32 requires CARB to adopt a quantified cap on GHG emissions representing 1990 emissions levels and disclose how it arrived at the cap; institute a schedule to meet the emissions cap; and develop tracking, reporting, and enforcement mechanisms to ensure that the state reduces GHG emissions sufficient to meet the cap. AB 32 also includes guidance on instituting emissions reductions in an economically efficient manner, along with conditions to ensure that businesses and consumers are not unfairly affected by the reductions. Using these criteria to reduce statewide GHG emissions to 1990 levels by 2020 would represent an approximate 25 to 30 percent reduction in current emissions levels. However, CARB has discretionary authority to seek greater reductions in more significant and growing GHG sectors, such as transportation, as compared to other sectors that are not anticipated to significantly increase emissions. Under AB 32, CARB must adopt regulations by January 1, 2011 to achieve reductions in GHGs to meet the 1990 emission cap by 2020.

- Executive Order S-1-07

Executive Order S-1-07, which was signed by Governor Schwarzenegger in 2007, proclaims that the transportation sector is the main source of GHG emissions in California, generating more than 40 percent of

statewide emissions. It establishes a goal to reduce the carbon intensity of transportation fuels sold in California by at least ten percent by 2020. This order also directs CARB to determine whether this Low Carbon Fuel Standard (LCFS) could be adopted as a discrete early-action measure to meet the mandates in AB 32. On April 23, 2009 CARB approved the proposed regulation to implement the LCFS. The LCFS will reduce GHG emissions from the transportation sector in California by about 16 MMT in 2020, and is designed to reduce California's dependence on petroleum, create a lasting market for clean transportation technology, as well as stimulate the production and use of alternative, low-carbon fuels in California. The LCFS is designed to provide a durable framework that uses market mechanisms to spur the steady introduction of lower carbon fuels. This framework establishes performance standards that fuel producers and importers must meet each year beginning in 2011. One standard is established for gasoline and the alternative fuels that can replace it. A second similar standard is set for diesel fuel and its replacements.

The standards are "back-loaded"; meaning that more reductions are required in the last five years, than the first five years. This schedule allows for the development of advanced fuels that are lower in carbon than today's fuels and the market penetration of plug-in hybrid electric vehicles, battery electric vehicles, fuel cell vehicles, and flexible fuel vehicles. It is anticipated that compliance with the LCFS will be based on a combination of strategies involving lower carbon fuels and more efficient, advanced-technology vehicles.

- Senate Bill 97

SB 97, signed August 2007 (Chapter 185, Statutes of 2007; PRC Sections 21083.05 and 21097), acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA. This bill directs the Governor's Office of Planning and Research (OPR), to prepare, develop, and transmit to CARB guidelines for the feasible mitigation of GHG emissions (or the effects of GHG emissions), as required by CEQA, by July 1, 2009. The Resources Agency was required to certify and adopt those guidelines by January 1, 2010. SB 97 also removed, both retroactively and prospectively, the legitimacy of litigation alleging inadequate CEQA analysis of effects of GHG emissions in the environmental review of projects funded by the Highway Safety, Traffic Reduction, Air Quality and Port Security Bond Act of 2006 or the Disaster Preparedness and Flood Protection Bond Act of 2006 (Proposition 1B or 1E). This provision was repealed by operation of law on January 1, 2010; at that time, any such projects that remain unapproved would no longer be protected against litigation claims of failure to adequately address climate change issues. In the future, this bill will only protect a handful of public agencies from CEQA challenges on certain types of projects, and only for a few years' time.

As set forth more fully below, in June 2008, OPR published a technical advisory recommending that CEQA lead agencies make a good-faith effort to estimate the quantity of GHG emissions that would be generated by a proposed Project. Specifically, based on available information, CEQA lead agencies should estimate the emissions associated with project-related vehicular traffic, energy consumption, water usage, and construction activities to determine whether project-level or cumulative impacts could occur, and should mitigate the impacts where feasible (Governor's Office of Planning and Research, 2008). OPR requested CARB technical staff to recommend a method for setting CEQA thresholds of significance, as described in Section 15064.7 of *CEQA Guidelines*, which will encourage consistency and uniformity in the CEQA analysis of GHG emissions throughout the State.

- Senate Bill 375

SB 375, signed in September 2008 (Chapter 728, Statutes of 2008), aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a sustainable communities strategy (SCS) or alternative planning strategy (APS) that will prescribe land use allocation in that MPOs Regional Transportation Plan. CARB, in consultation with MPOs, will provide each affected region with reduction targets for GHGs emitted by passenger

cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. CARB is also charged with reviewing each MPO's SCS or APS for consistency with its assigned targets. If MPOs do not meet the GHG reduction targets, transportation projects may not be eligible for funding programmed after January 1, 2012.

This law also extends the minimum time period for the regional housing needs allocation cycle from five years to eight years for local governments located within an MPO that meets certain requirements. City or county land use policies (including general plans) are not required to be consistent with the Regional Transportation Plan (and associated SCS or APS). However, new provisions of CEQA would incentivize (through streamlining and other provisions) qualified projects that are consistent with an approved SCS or APS, categorized as "transit priority projects."

- California Climate Action Registry General Reporting Protocol

The California Climate Action Registry (CCAR) was established in 2001 by SB 1771 and SB 527 (Chapter 1018, Statutes of 2000, and Chapter 769, Statutes of 2001, respectively) as a nonprofit voluntary registry for GHG emissions. The purpose of the CCAR is to help companies and organizations with operations in the State to establish GHG emissions baselines against which any future GHG emissions reduction requirements may be applied. CCAR has developed a general protocol and additional industry-specific protocols that provide guidance on how to inventory GHG emissions for participation in the registry.

This protocol provides the principles, approach, methodology, and procedures required for participation in CCAR. It is designed to support the complete, transparent, and accurate reporting of an organization's GHG emissions inventory in a fashion that minimizes the reporting burden and maximizes the benefits associated with understanding the connection between fossil fuel consumption, electricity use, and GHG emissions in a quantifiable manner. The most updated version of this protocol was prepared in April 2008. All cabinet-level state agencies and departments have joined the CCAR. Membership in the CCAR means that all members of the Governor's Cabinet will be reporting their GHG emissions on a yearly basis.

- California Code of Regulations Title 24

Although not originally intended to reduce greenhouse gas emissions, California Code of Regulations Title 24 Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. The GHG emission inventory was based on Title 24 standards as of October 2005; however, Title 24 has been updated as of 2008 and standards are set to be phased in summer 2009. Energy efficient buildings require less electricity, natural gas, and other fuels. Electricity production from fossil fuels and on-site fuel combustion (typically for water heating) results in greenhouse gas emissions. Therefore, increased energy efficiency results in decreased greenhouse gas emissions.

- CAPCOA January 2008 CEQA and Climate Change

In January 2008, the California Air Pollution Control Officers Association (CAPCOA) issued a "white paper" on evaluating GHG emissions under CEQA. The CAPCOA white paper strategies are not guidelines and have not been adopted by any regulatory agency; rather, the paper is offered as a resource to assist lead agencies in considering climate change in environmental documents.

The CAPCOA white paper addresses what constitutes new emissions, how baseline emissions should be established, what should be considered cumulatively considerable under CEQA, what a business as usual (BAU) scenario means, and whether an analysis should include life-cycle emissions.

The CAPCOA white paper contains a Climate Change Significance Criteria Flow Chart that proposes a tiered approach to determining significance under CEQA. The flow chart would consider a proposed plan's impact to be less than significant if a General Plan for the project area exists that is in compliance with AB 32 (showing that GHG emissions for 2020 would be less than 1990 emissions for the plan area). The flow chart would consider a proposed Project's impact to be significant unless one of the following can be demonstrated:

- The project is exempt under SB 97;
- The project is on the "Green List" (Projects that are deemed a positive contribution to California efforts to reduce GHG emissions);
- A General Plan for the project area exists that is in compliance with AB 32; and/or
- GHG emissions are analyzed and mitigated to less-than-significant.

The CAPCOA white paper considers GHG impacts to be exclusively cumulative impacts.

- CARB Climate Change Proposed Scoping Plan

On December 11, 2008, CARB adopted its Scoping Plan, which functions as a roadmap of CARB's plans to achieve GHG reductions in California required by AB 32 through subsequently enacted regulations. CARB has estimated that the 1990 GHG emissions level was 427 MMT net CO_2e (CARB 2007b). CARB estimates that a reduction of 173 MMT net CO_2e emissions below Business As Usual (BAU) would be required by 2020 to meet the 1990 levels (CARB, 2007b). This amounts to a 15 percent reduction from today's levels, and a 30 percent reduction from projected BAU levels in 2020 (CARB, 2008a).

CARB's Scoping Plan calculates 2020 BAU emissions as those expected to occur in the absence of any GHG reduction measures. The 2020 BAU emissions estimate was derived by projecting emissions from a past baseline year using growth factors specific to each of the different economic sectors, i.e. transportation, electrical power, commercial and residential, industrial etc. CARB used three-year average emissions, by sector, for 2002-2004 to forecast emissions to 2020 At the time CARB's Scoping Plan process was initiated, 2004 was the most recent year for which actual data was available. The measures described in CARB's Scoping Plan are intended to reduce the projected 2020 BAU to 1990 levels, as required by AB 32. CARB's Scoping Plan also breaks down the amount of GHG emissions reductions CARB recommends for each emissions sector of the state's GHG inventory. CARB's Scoping Plan calls for the largest reductions in GHG emissions to be achieved by implementing the following measures and standards:

- Improved emissions standards for light-duty vehicles (estimated reductions of 31.7 MMT CO_2E);
- The LCFS (15.0 MMT CO_2E);
- Energy efficiency measures in buildings and appliances, and the widespread development of combined heat and power systems (26.3 MMT CO_2E); and
- A renewable portfolio standard for electricity production (21.3 MMT CO_2E). CARB has identified a GHG reduction target of 5 MMT (of the 174 MMT total) for local land use changes (Table 2 of CARB's Scoping Plan), by Implementation of Reduction Strategy T-3 regarding Regional Transportation-Related GHG Targets. Additional land use reductions may be achieved as SB 375 is implemented. CARB's Scoping Plan states that successful implementation of the plan relies on local governments' land use, planning, and urban growth decisions because local governments have primary authority to plan, zone, approve, and permit land development to accommodate population growth and the changing needs of their jurisdictions. CARB further acknowledges that decisions on how land is used will have large effects on the GHG

emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emission sectors. CARB's Scoping Plan does not include any direct discussion about GHG emissions generated by construction activity. The measures approved by the Board are being developed to be in place by 2012. CARB's Scoping Plan expands the list of nine Discrete Early Action Measures to a list of 39 Recommended Actions contained in Appendices C and E of CARB's Scoping Plan.

- OPR June 2008 Technical Advisory on CEQA and Climate Change

SB 97 directs the Governor's Office of Planning and Research (OPR) to develop guidelines for the mitigation of GHG emissions or the effects of GHG emissions under CEQA. OPR is required to prepare and transmit these guidelines by July 1, 2009 for certification and adoption by January 1, 2010. In the interim, a June 2008 Technical Advisory provides informal guidance for public agencies as they address the issue of climate change in their CEQA documents. The June 2008 Technical Advisory offers recommendations for identifying GHG emissions, determining significance under CEQA, and mitigating impacts.

The Advisory states that lead agencies under CEQA should develop their own approach to performing a climate change analysis for projects that generate GHG emissions. It also states that the lead agency should assess whether project emissions are individually or cumulatively significant, and implement strategies to avoid, reduce, or otherwise mitigate the impacts of those emissions when impacts are potentially significant. However, CARB's subsequently released draft thresholds acknowledge that the GHG analysis should be on a cumulative basis as GHG is a global phenomenon.

Regional agencies can attempt to reduce GHG emissions through their planning processes. For example, regional transportation planning agencies can adopt plans and programs that address congestion relief and reduce VMT.

In April 2009, OPR published its proposed revisions to CEQA to address GHG emissions. The amendments to CEQA indicate the following:

- Climate action plans and other greenhouse gas reduction plans can be used to determine whether a project has significant impacts, based upon its compliance with the plan;
- Local governments are encouraged to quantify the greenhouse gas emissions of proposed projects, noting that they have the freedom to select the models and methodologies that best meet their needs and circumstances. The section also recommends consideration of several qualitative factors that may be used in the determination of significance, such as the extent to which the given project complies with state, regional, or local GHG reduction plans and policies. OPR does not set or dictate specific thresholds of significance. Consistent with existing CEQA Guidelines, OPR encourages local governments to develop and publish their own thresholds of significance for GHG impacts assessment.;
- When creating their own thresholds of significance, local governments may consider the thresholds of significance adopted or recommended by other public agencies, or recommended by experts;
- New amendments include guidelines for determining methods to mitigate the effects of greenhouse gas emissions in Appendix F of the CEQA Guidelines;
- OPR is clear to state that "to qualify as mitigation, specific measures from an existing plan must be identified and incorporated into the project; general compliance with a plan, by itself, is not mitigation;" and
- OPR emphasizes the advantages of analyzing GHG impacts on an institutional, programmatic level. OPR therefore approves tiering of environmental analyses and highlights some benefits of such an approach.

- OPR January 8, 2009 Preliminary Draft CEQA Guideline Amendments for GHG Emissions

In January 2009, OPR released preliminary proposed amendments to the *CEQA Guidelines* regarding GHG emissions. No significance threshold is included in the draft and the guidelines afford the customary deference provided to lead agencies in their analysis and methodologies. The introductory preface to the amendments recommends that CARB set state-wide thresholds of significance. CARB released draft thresholds, as referenced below. OPR emphasized the necessity of having a consistent threshold available to analyze projects, and the analyses should be performed based on the best available information. For example, if a lead agency determines that GHGs may be generated by a proposed Project, the agency is responsible for quantifying estimated GHG emissions by type and source. The preliminary draft guidelines provide the following recommendations for determining the significance of GHG emissions under draft Section 15064.4:

a. The determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency consistent with the provisions in section 15064. A lead agency should make a good-faith effort, based on available information, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project. A lead agency shall have discretion to determine, in the context of a particular project, whether to:

    1. Use a model or methodology to quantify greenhouse gas emissions resulting from a project, and which model or methodology to use. The lead agency has discretion to select the model it considers most appropriate provided it supports its decision with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use; or

    2. Rely on a qualitative analysis or performance based standards.

b. A lead agency may consider the following when assessing the significance of impacts from greenhouse gas emissions on the environment:

    1. The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting;

    2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; and

    3. The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. Such regulations or requirements must be adopted by the relevant public agency through a public review process and must include specific requirements that reduce or mitigate the project's incremental contribution of greenhouse gas emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

The proposed amendments reiterate that the analysis of GHG impacts is cumulative. Section 15130 (f) provides that an EIR shall analyze GHG emissions resulting from a proposed Project when the incremental contribution of those emissions may be cumulatively considerable. On April 13, 2009, OPR submitted its proposed amendments to the state *CEQA Guidelines* for GHG emissions to the Secretary for Natural Resources, as required by Senate Bill 97 (Chapter 185, 2007). The Natural Resources Agency will conduct formal rulemaking prior to certifying and adopting the amendments, as required by Senate Bill 97. The draft guidelines are not scheduled to be adopted until mid-2010 and are prospective in application. Therefore, any new amendments addressing GHG emissions would not be applicable to the proposed project.

- CARB Preliminary Draft Staff Proposal, October 2008

  Separate from CARB's Scoping Plan approved in December 2008, CARB issued a Staff Proposal in October 2008, as its first step toward developing recommended statewide interim thresholds of significance for GHGs that may be adopted by local agencies for their own use. The proposal does not attempt to address every type of project that may be subject to CEQA, but instead focuses on common project types that, collectively, are responsible for substantial GHG emissions – specifically, industrial, residential, and commercial projects. CARB is developing thresholds in these sectors to advance climate objectives, streamline project review, and encourage consistency and uniformity in the CEQA analysis of GHG emissions throughout the state. These draft thresholds are under revision in response to voluminous comments received. Finalized thresholds are expected in 2010.

  CARB staff's objective in this proposal is to develop a threshold of significance that would require the vast majority (approximately 90 percent statewide) of GHG emissions from new industrial projects to be subject to CEQA's requirement to impose feasible mitigation. CARB believes this can be accomplished with a threshold that allows small projects to be considered insignificant. CARB staff used existing data for the industrial sector to derive a proposed hybrid threshold. The threshold consists of a quantitative threshold of 7,000 metric tons of CO_2E per year (MT/year CO_2E) for operational emissions (excluding transportation), and performance standards for construction and transportation emissions. These performance standards have not yet been developed.

Regional

- San Joaquin Valley Air Pollution Control District

  To assist Lead Agencies, project proponents, permit applicants, and interested parties in assessing and reducing the impacts of project specific greenhouse gas emissions (GHG) on global climate change, the San Joaquin Valley Air Pollution Control District (District) has adopted the guidance: *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA* and the policy: *District Policy – Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency*. The guidance and policy rely on the use of performance based standards, otherwise known as Best Performance Standards (BPS) to assess significance of project specific greenhouse gas emissions on global climate change during the environmental review process, as required by CEQA. Use of BPS is a method of streamlining the CEQA process of determining significance and is not a required emission reduction measure. Projects implementing BPS would be determined to have a less than cumulatively significant impact. Otherwise, demonstration of a 29 percent reduction in GHG emissions, from business-as-usual, is required to determine that a project would have a less than cumulatively significant impact. The guidance does not limit a lead agency's authority in establishing its own process and guidance for determining significance of project related impacts on global climate change.

Environmental Impacts, Mitigation Measures and Significance After Mitigation

Methodology

Climate change is a significant global cumulative impact that could also have a substantial effect on the natural environment of California and within Kern County. The potential contribution of the 2011 RTP to this cumulative impact is discussed below.

State action on climate change is mandated by AB 32. Kern COG, along with other regional planning agencies throughout the state, will be monitoring the progress of state agencies in developing approaches to address GHG

emissions. As agreed-upon approaches for project-level CEQA analysis and for transportation planning are established, Kern COG expects that climate change will be a key environmental consideration in future regional transportation planning. Both Kern COG and responsible agencies implementing projects outlined in the 2011 RTP will be required to adhere to any future applicable mandatory regulations regarding global warming resulting from the passage of AB 32, but the exact character of such future implementing strategies is not known at this time.

While the cumulative significance of climate change has been established, in absence of established project-level significance thresholds, Kern COG considers it speculative at this time to determine whether the GHG emissions related to transportation in Kern County represents a considerable contribution to a significant cumulative impact. Kern COG does find that implementation of the 2011 RTP is likely to reduce emissions relative to the No-Build Alternative because of increased funding for transit improvements and improved traffic levels of service.

Although the COGs do not have land use authority to implement more compact and energy efficient land use, or limit growth, the eight San Joaquin Valley Councils of Governments or County Transportation Commissions are working on a significant public outreach project called the San Joaquin Valley Blueprint, providing education on the effects urban sprawl. The process will ultimately identify a preferred land use scenario separate from the local government general plan process. Dependent upon the success of the educational effort now underway, the process could result in a vision for the San Joaquin Valley that is more energy efficient than historic growth trends in the region.

As previously indicated, neither CEQA nor the CEQA Guidelines mention or provide any methodology for analysis of "greenhouse gases," including CO_2, nor do they provide any significance thresholds. However, the air quality model used to predict emissions rates of the criteria pollutants (EMFAC) is capable of modeling the emissions of CO_2, and Kern COG analyzed CO_2 emissions resulting from the Proposed Plan. Even though the total VMT increase, the proposed Plan results in a reduction in CO_2 emissions and would represent an improvement over the No Project Alternative as shown in Table 3-12. The improvement in operations compared to the No Build Alternative, particularly higher speed and reduced vehicle hours traveled (VHT), has a beneficial cumulative impact on CO_2 emissions due to improved traffic flow, resulting in more efficient vehicle operation, which is consistent with the results for the analysis of the other criteria pollutants. The Proposed Plan would result in a positive cumulative effect on the reduction of CO_2 levels and would not require mitigation.

TABLE 3-12
Future CO_2 Emissions (Tons Per Day - 000s)

Scenarios	CO_2
No Build Alternative (2035)	34.42
Proposed Plan (2035)	34.34
Difference	-0.08

The impact assessment for GHG emissions focuses on potential effects the Project might have on GHG emissions within the Kern Region. The assessment is not site or individual improvement project-specific but is a regional analysis.

Criteria for Significance

As with any environmental impact, lead agencies must determine what constitutes a significant impact. In the absence of regulatory standards for GHG emissions or other scientific data to clearly define what constitutes a "significant impact", individual lead agencies may undertake a project-by-project analysis, consistent with available guidance and current CEQA practice. The potential effects of a project may be individually limited but cumulatively

significant. Lead agencies should not dismiss a proposed project's direct and/or indirect climate change impacts without careful consideration, supported by substantial evidence. Although climate change is ultimately a cumulative impact, not every individual project that emits GHGs must necessarily be found to contribute to a significant cumulative impact on the environment. CEQA authorizes reliance on previously approved plans and mitigation programs that have adequately analyzed and mitigated GHG emissions to a less than significant level as a means to avoid or substantially reduce the cumulative impact of a project, encourages reliance on other Environmental Impact Reports that discuss greenhouse gases, and tiering from them. The preliminary draft amendments OPR issued included an introductory letter in which OPR indicated that it intends to rely on CARB to recommend a method for setting significance thresholds.

Impact 3.5.1 - Increased Transportation GHG Emissions May Cause Climate Change

The ultimate sources of increased transportation emissions in Kern County are population and employment growth, which will increase with or without projects referenced in the 2011 RTP. Kern COG does not implement land use policy in Kern County; rather, this is under the jurisdiction of the County and the various cities. Decisions about the place, pace, and scale of growth and development are reflected in the general plans and project approvals adopted by the local agencies. The 2011 RTP is designed to complement, rather than change, the plans adopted by the local agencies. Thus, the ultimate effect of the 2011 RTP on transportation emissions is not to increase the amount of travel per se, but rather to influence where and how travel occurs within and through the County.

Impact 3.5.2 - Cumulative GHG Emission Impact

It is possible that local transportation GHG emissions within Kern County, when combined with emissions throughout California and the world, might contribute to climate change. Based upon analysis conducted by the IPCC, climate change is a significant cumulative impact, given the ramifications for air quality, climate, public health, water resources, flooding, sea level, agricultural productivity, and biological resources, among other potential effects. However, no agreed-upon methodology is currently available under CEQA to adequately identify when project-level GHG emissions contribute considerably to this significant cumulative impact.

Also, the ultimate sources of increased transportation emissions in Kern County are population and employment growth, which will increase with or without projects included in the 2011 RTP. Kern COG does not implement land use policy in Kern County; rather, this is under the jurisdiction of the County and the various cities. As such, decisions about the place, pace, and scale of growth and development are reflected in local agency general plans and project approvals approved by those agencies. The 2011 RTP is designed to complement, rather than change the plans adopted at the County and city levels. Thus, the ultimate effect of the 2011 RTP on transportation emissions is not to increase the amount of travel per se, but rather to influence where and how travel occurs within the County. Thus, comparison of emissions between what exists today and what would exist in 2035 with the 2011 RTP is not a true measure of the effect of the project on GHG emissions. A better identification of the effect of the project is to compare the emissions potential with the project against the No-Project Alternative as well as other alternatives. As previously noted, the proposed project would result in lower emissions of criteria pollutants than the No-Project Alternative.

Mitigation Measures

The ultimate sources of increased transportation emissions in Kern County are population and employment growth, which will increase with or without projects referenced in the 2011 RTP. Kern COG does not implement land use policy in Kern County; rather, this is under the jurisdiction of the County and the various cities. Decisions about the place, pace, and scale of growth and development are reflected in the general plans and project approvals adopted by the local agencies. The 2011 RTP is designed to complement, rather than change, the plans adopted by the local

agencies. Thus, the ultimate effect of the 2011 RTP on transportation emissions is not to increase the amount of travel per se, but rather to influence where and how travel occurs within and through the County.

As of the writing of this SEIR, the agencies with jurisdiction over air quality regulation and GHG emissions (CARB and the San Joaquin Valley Air Pollution Control District) have not established regulations, guidance, methodologies, significance thresholds, standards, CEQA protocols or mitigation measures that specify the type of analysis, or mitigation measures, that can be included in a program EIR, or other CEQA document. In addition, no emission inventories or emission baselines have been established that would allow for an appropriate analysis to evaluate an existing setting and impact analysis for the proposed implementation of the Kern County RTP because of climate change. Kern COG adheres to the rules and guidelines currently in place at the local, State and federal level, and will adhere to any future regulations regarding global warming resulting from the legislative approval of AB 32 and AB 1493, when available.

A number of mitigation measures are included in Section 3.3 of the SEIR to address criteria emissions. Public transit has been enhanced in the 2011 RTP compared to the current RTP (adopted in 2007). Such improvements will help mitigate expected increases in emissions resulting from increased population and employment and the impact of planned growth and development on the regional transportation system. The RTP also includes references to a number of studies. The Plan contains a number of projects and significant funding for various forms of transportation in addition to streets and highways. Kern COG is in the process of developing a Regional Blueprint for the year 2050. Kern COG is coordinating development of the Blueprint with the other seven counties within the San Joaquin Valley. All eight counties are located in the same Air Basin (San Joaquin Valley Air Basin) and received the grant for Blueprint development from the State of California. The Blueprint programs in California are designed to address the three "E"s of Regional Blueprint Planning; that is, Energy Efficiency, the Environment, and Economic Development. The Regional Blueprint will identify a preferred land use scenario and transportation system for Kern County considering the application of alternative growth strategies. The Plan identifies a vision, values, goals, objectives, and implementing strategies that can be planned by Kern COG and implemented by local agencies within the County to reduce vehicle trips, vehicle miles traveled (VMT), and support increased walkability, passenger rail, public transit systems, and bicycling.

Further, public transit over the next 20 years has been enhanced in the 2011 RTP over existing conditions and even when compared to the current RTP (adopted in 2007). Such improvements will help mitigate expected increases in emissions resulting from increased population and employment and the impact of planned growth and development on the regional transportation system. Furthermore, the RTP includes references to a number of studies (some of which are described above). The Project improvements are expected to reduce VMT and vehicle trips and as a result, GHG emissions.

Kern COG cannot require that local agencies, Caltrans, the Air District or other agencies that use diesel-powered vehicles and equipment apply retrofit emission control devices, such as diesel oxidation catalysts and diesel particulate filters verified by CARB. Kern COG also cannot require that the same agencies use alternative forms of cement and asphalt that have lower GHG emissions. It is recommended however, that responsible agencies (local agencies, the Air District, Caltrans, and others) consider the implementation of such measures during individual project development and construction.

Both Kern COG and responsible agencies implementing projects outlined in the 2011 RTP will be required to adhere to any future applicable mandatory regulations regarding global warming resulting from the passage of AB 32 and AB 1493, but the exact character of such future implementing strategies is not known at this time. Kern COG and the local agencies will quantify GHG emissions consistent with Guidelines and requirements developed by CARB. Once the Guidelines are available, Kern COG will address GHG emissions and global warming impacts of projects contained in the 2011 RTP.

The following mitigation measures are intended to address regional and project-level impacts, as appropriate. For project-level impacts, the individual improvement project proponent or local jurisdiction will be responsible for ensuring adherence to the mitigation measures.

- Transportation

  - Work with member agencies to increase the number of Alternative Fuel Vehicles (AFV) in municipally owned vehicles;
  - Funding retrofit, repower or replacement of diesel vehicles with funding from applicable federal, state and local sources;
  - Encouragement of technology, such as electrification, to provide alternatives to operating the heating and air conditioning, refrigeration units while idling at distribution centers, warehouses, truck shops and other facilities where diesel trucks may reside overnight or for periods of several hours;
  - Subsidize carpool and vanpool programs that originate in Kern County'
  - Support efforts that further analyze GHG emission contributions from goods movement through transportation corridors, trucking and other relevant freight movement practices;
  - Support the use of grants, loans and incentives to assist local governments with the implementation of climate change response activities and GHG reduction strategies;
  - Support state legislation to provide incentive funds to local governments to develop and implement GHG reduction programs; and
  - Support efforts that will enable cities and counties to purchase new vehicles for local fleets that conform to state purchasing standards, are fuel efficient, low emission or use alternative fuels.

- Land Use (Blueprint)

  - Develop land use patterns, which encourage people to walk, bicycle, or use public transit for a significant number of their daily trips;
    - Use circulation elements of general plans to ensure that development is consistent and well connected by alternative transportation modes (as required by AB 1358 effective January 1, 2011);
    - Adopt transit-oriented or pedestrian-oriented design strategies and select areas appropriate for these designs in the general plan;
    - Support higher density development in proximity to commonly used services and transportation facilities, such as transit centers;
    - Promote a balance of housing, shopping, and other amenities on the urban fringe and outlying communities that service strategic rural employment areas such as military bases, prisons, wind/alternative energy areas, oil production/mining, agriculture/ranching, food processing, warehouse distribution/intermodal centers, travel centers, recreation areas, etc.;
    - Promote affordable housing affordable relative to average wages in the community to reduce commute distances;
    - Promote reduced travel by providing electric vehicles, bike, pedestrian and equestrian paths and park-and-ride lots;
    - Promote phasing of new housing developments that reduce the need for long distance commutes to work and retail centers while construction is underway;
    - Provide subsidies for alternative transportation such as vanpools and transit until such time as ridership is at a level that supports the minimum transit fare box subsidy requirements;
    - In transit-oriented areas, provide for express transit or bus rapid transit service and circulator feeder systems. Service should plan for direct access to the Bakersfield High Speed Rail station;
    - In transit-oriented areas, reduce parking requirements and provide car/vanpool parking areas;

  - In transit oriented areas include a transit pass/subsidy as part of the housing rental agreement, commercial rent agreement, employer benefit package, or monthly housing payment of new developments to ensure that express transit service has sufficient ridership to meet the minimum fare box requirement. and
  - Space walkable/bikeable transit centers a minimum of 1 – 3 miles apart to ensure that travel times compete with passenger vehicle travel times.
- In urban areas, develop in a compact, efficient form to reduce vehicle miles traveled and to improve the efficiency of alternatives to the automobile:
  - Use the control of public services to direct development to the most appropriate locations; and
  - Promote infill of vacant land and redevelopment sites.
- Encourage project site designs and subdivision street and lot designs that support walking, bicycling, and transit use:
  - Adopt design guidelines and standards promoting plans that encourage alternative transportation modes; and
  - Require certain sites to be created to allow convenient access by transit, bicycle, and walking.
- Accommodate projected population growth by identifying appropriate areas for urban and rural growth, economic development, and multi-modal transportation corridors that support smart growth principles;
- Promote 'downtowns' or 'urban centers' as the commercial, financial and social centers of communities. Promote higher density housing located adjacent to and within convenient walking distance to downtown, urban mixed use centers and/or transit corridors;
- Support and encourage policies and plans which direct growth to well planned neighborhoods and communities;
- Encourage the design and development of an effective transportation system that integrates all modes into a seamless, reliable, cost-efficient system, including intelligent transportation solutions and high tech communication options;
- Support intermodal travel including park-and-ride, rideshare, bicycle, rail and transit programs;
- Support increased mass transit connectivity and accessibility;
- Promote reduction of vehicle miles traveled;
- Promote the achievement and maintenance of State and Federal standards for air quality;
- Encourage General Plan, Community Plan and Specific Plan updates to include air quality elements, Greenhouse Gas Emission Reduction Plans and mitigation measures that reduce air pollution and vehicle miles traveled from existing and new development;
- Encourage the reduction of air pollution impacts from new developments;
- Help establish baseline GHG emission rates for municipalities; and
- Promote landscaping strategies that will reduce GHG.

◆ <u>Energy</u>

- Promote the use of LED technology or comparable energy-efficient technology for traffic lights, rail signals and other features compatible with LED or comparable energy-efficient technologies;
- Support the use of procurement practices that promote the use of energy efficient products and equipment;
- Support and coordinate efforts that address strategies to reduce greenhouse gases into planning efforts; and
- Promote energy efficiency, solar energy production and other methods of reducing GHG production.

◆ <u>Emission Reduction Plan</u>

- Prior to or in conjunction with the adoption of the proposed 2014 RTP, Kern COG and/or its member agencies will develop a GHG Emissions Reduction Plan that includes the following:
  - General discussion of the potential impacts that GCC poses to the Kern County region, with particular focus on potential impacts related to RTP facilities, to the extent that such information is available;

- A baseline inventory of total GHG emissions directly and indirectly from transportation in the County that currently exist, and review of potential targets and timelines for achieving GHG reductions;
- Development of feasible GHG emissions reduction measures and strategies to achieve reductions in RTP GHG emissions. Such reduction measures may include construction of new transportation projects, modification of existing facilities or services, incentive or funding programs, pricing strategies, regulations or any other actions that reduce GHG emissions associated with RTP activities; and
- State protocols and GHG emissions inventory mechanisms are necessary tools to track and monitor GHG emissions at the local level. Kern COG and member agencies must determine, in cooperation with the state, the solutions that will best minimize its potential risks and maximize its potential benefits.

♦ Intelligent Transportation Systems

➢ Develop an Intelligent Transportation Systems strategy to implement the Integrated Performance Management Systems Network that will:
- Interconnect the region's local transportation management centers, including the use of cameras, and computer hardware and software to detect and clear accidents;
- Use technology to improve traffic signal timing in order to optimize traffic flow and transit service; and
- Involve new equipment to improve on-time transit performance and provide real-time transit information at stops and stations.

♦ Alternative Fuel Vehicle and Infrastructure Toolkit for Local Governments

➢ Kern COG will develop an Alternative Fuel Vehicle (AFV) and Infrastructure Toolkit for member agencies that will contain best practices related to ordinances, analytical tools, financing opportunities, codes, and standards related to reducing GHG emissions. Kern COG will identify the alternative fuel vehicle(s) (e.g. neighborhood electric vehicles) and alternative fuel infrastructure with the potential to result in the greatest GHG emission reductions. Kern COG will conduct a public education program for local governments and other public agencies, as appropriate to encourage the use of alternative fuel vehicles and infrastructure; and

➢ Kern COG will work with its member agencies to increase the number of AFVs (i.e., vehicles not powered strictly by gasoline or diesel fuel) both in municipally owned vehicles, as well as those owned by franchisees of these cities, such as trash haulers, green waste haulers, street sweepers, and curbside recyclable haulers. Such AFVs shall have GHG emissions at least 10 percent lower than comparable gasoline- or diesel-powered vehicles. The Alternative Fuel Vehicle and Infrastructure Toolkit described above will include best practices strategies to aid in the transformation of municipally owned or contracted fleets, including vehicle fleets operated and/or funded, at least in part by Kern COG.

♦ Transportation Pricing Policy (GET Long Range Transit Study)

Kern COG will prepare an analysis on the impacts and the viability of using pricing policies with the transit system and selected portions of the road network to encourage people to drive less and use transit, walking, and bicycling modes more. This study will identify strategies to reduce GHG emissions that will include, but are not limited to, free or reduced transit fares during "spare the air" days; fare-free zones on the transit system; transit vouchers; days on which transit is free; congestion pricing options for portions of the road system, such as tolls on freeways and highways; and congestion-pricing to enter certain high-traffic areas served by public transit (e.g. downtown areas). Kern COG shall adopt a transportation pricing policy based upon these strategies, and shall conduct seminars with local government staff, planning commissioners and elected officials and members of the private development, planning, engineering and design communities to disseminate these strategies.

- Public Education Program on Individual Transportation Behavior and Climate Change

  In conjunction with key partners such as local air districts, public utility providers, area chambers of commerce and others, Kern COG will create a public information program to educate the public about the connection between individual transportation behavior and global climate change, including transportation behavior modifications the public can make to reduce their GHG emissions over time. Kern COG shall include information on its website that is focused on global climate change. The website shall identify actions the public can take to reduce their carbon footprint, and provide web links to sources of information designed to promote alternative mode use (carpools, vanpools, public transit, bicycling, walking, telecommuting) and other travel demand management strategies.

- Workshop on Global Climate Change for Local Government Officials and Create GHG Emissions Reduction Strategies Toolkit

  - Kern COG will provide funding for a workshop on global climate change for local government officials that will focus on practical techniques that local governments can implement to reduce greenhouse gas emissions at the city and county level. Workshop topics shall include, but are not limited to the following:
    - The basic science behind climate change and its effects on the Kern County Region;
    - Addressing the California Environmental Quality Act (CEQA) and the effects of AB 32;
    - What cities and counties are doing to address climate change and CEQA;
    - Cost effective actions cities can take to reduce greenhouse emissions; and
    - Actions being taken in the Kern County area to advance and support innovative "green" business.

  - Kern Cog in conjunction with other key partners, shall produce a toolkit for local governments to use to take effective actions to reduce greenhouse gas emissions over time. The toolkit will incorporate recommendations by the workshop participants to identify which issues are important for the region and the tools and resources they would like to have available to reduce greenhouse emissions .

- Establish a Baseline for Kern's Own GHG Impacts

  - Starting in calendar year 2011, Kern COG shall measure and record the GHG emissions associated with its own operations in an accurate manner and in a format consistent with the California Climate Action Registry's own reporting protocol in order to establish a baseline against which any future GHG reductions may be applied. The report shall be independently audited by a State and Registry approved certifier. The report shall include the following elements:
    - Indirect emissions from electricity and natural gas use;
    - Direct emissions from mobile source combustion (agency vehicles);
    - Indirect emissions from business-related employee air travel;
    - Direct and Indirect emissions from employee commuting; and
    - Indirect emissions associated with Kern COG purchasing practices.

  - Kern COG shall continue to report on its own GHG emissions consistent with this format in subsequent years and track its progress in reducing emissions.

- Project level environmental documents shall analyze construction and maintenance Greenhouse Gas (GHG) emissions.

Significance After Mitigation

Implementation and monitoring of the above mitigation measures will provide the framework and direction for subsequent regional program-specific and individual improvement project-specific mitigation designed to avoid or reduce the identified significant Project impacts to a less than significant level; however, it is unlikely that mitigation measures would reduce GHG emissions below existing conditions (let alone to 1990 levels as required by AB 32) due to anticipated population growth. As such, significant and unavoidable impact s on global warming will occur.

3.6 CULTURAL RESOURCES

Kern County contains a rich array of cultural resources, including prehistoric and historical archaeological sites, paleontological sites, historical buildings, and structures associated with agriculture, mining, and petroleum development. Properties important to Native American communities and other ethnic groups, including tangible properties possessing intangible traditional cultural values, also are present. Such resources may exist individually, in groupings of modest size, or in districts covering substantial geographies. These resources are regulated at the federal, state, and local levels as discussed below.

Regulatory

Federal Regulations

Various federal laws, regulations, and guidelines specify how cultural resources are to be managed in the context of projects that are considered "federal undertakings" (per 36 CFR 800). These federal statutes and guideline may be relevant to the proposed projects if federal funding is used, federal permits or authorizations are required, or a project crosses land managed by a federal agency.

Among the most relevant federal laws and regulations are: the *National Historic Preservation Act of 1966* (NHPA), as amended; the *National Environmental Policy Act of 1969* (NEPA); the *Archaeological Resources Protection Act of 1979* (ARPA); the Advisory Council on Historic Preservation's regulations, *Protection of Historic Properties* (36 CFR 800), establishing procedures for compliance with Section 106 of the NHPA; the National Park Service (NPS) regulations, *National Register of Historic Places* (36 CFR 60); *Archaeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines* (FR 190: 44716–44742); the *Native American Graves Protection and Repatriation Act of 1990* (PL 101–601, NAGPRA) and its implementing regulations (43 CFR 10); and the NPS regulations, *Curation of Federally-Owned and Administered Archaeological Collections* (36 CFR 79). Pertinent federal laws and regulations are summarized below.

- National Historic Preservation Act of 1966

  Requires federal agencies to consider the preservation of historic and prehistoric resources. The Act authorizes the Secretary of the Interior to expand and maintain a National Register of Historic Places (NRHP), and it establishes an Advisory Council on Historic Preservation (ACHP) as an independent federal entity. Section 106 of the Act requires federal agencies to take into account the effects of their undertakings on historic properties and afford the ACHP a reasonable opportunity to comment on the undertaking prior to licensing or approving the expenditure of funds on any undertaking that may affect properties listed, or eligible for listing, in the NRHP.

- Archaeological Resources Protection Act of 1979 (16 USC 470aa–470ll)

  Requires a permit for any excavation or removal of archaeological resources from public lands or Indian lands. The statute provides both civil and criminal penalties for violation of permit requirements and for excavation or removal of protected resources without a permit.

- Advisory Council Regulations, Protection of Historic Properties (36 CFR 800)

  Establishes procedures for compliance with Section 106 of the National Historic Preservation Act of 1966. These regulations define the Criteria of Adverse Effect, define the role of State Historic Preservation Officer (SHPO) in the Section 106 review process, set forth documentation requirements, and describe procedures to be followed if significant historic properties are discovered during implementation of an undertaking. Prehistoric

and historic resources deemed significant (i.e., eligible for listing in the National Register of Historic Places, per 36 CFR 60.4) must be considered in project planning and construction. The responsible federal agency must submit any proposed undertaking that may affect NRHP-eligible properties to the State Historic Preservation Officer (SHPO) for review and comment prior to project approval.

- Archaeology and Historic Preservation; Secretary of the Interior's Standards and Guidelines (FR 190:44716–44742)

  Offers non-regulatory technical advice about the identification, evaluation, documentation, study, and other treatment of cultural resources. Notable in these Guidelines are the "Standards for Archaeological Documentation" (p. 44734) and "Professional Qualifications Standards for Archaeology" (pp. 44740–44741).

- Department of Transportation Act of 1966. Section 4(f)

  Cultural resources are also protected under regulations of the of the Act 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 several types of land: public park lands, recreation areas, and publicly or privately owned historic properties of federal, state, or local significance. The Section 4(f) evaluation must be sufficiently detailed to permit the U.S. Secretary of Transportation to determine that there is no feasible and prudent alternative to the use of such land, in which case the project must include all possible planning to minimize harm to any park, recreation, wildlife and waterfowl refuge, or historic site that would result from the use of such lands. If there is a feasible and prudent alternative, a proposed project using Section 4(f) lands cannot be approved by the Secretary. Detailed inventories of the locations and likely impacts on resources that fall into the Section 4(f) category are required in project-level environmental assessments.

- Federal Antiquities Act of 1906

  Establishes national monuments and reservation of lands that have historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest on federal lands. It prohibits excavation or destruction of such antiquities unless a permit (Antiquities Permit) is obtained from the Secretary of the department, which has the jurisdiction over those lands.

- Historic Sites Act of 1935 (HSA)

  The HSA *(16 USC 461-467)* became law on August 21, 1935 and declared that it is national policy to "Preserve for public use historic sites, buildings, and objects of national significance." The NHPA expanded the scope to include important state and local resources. Provisions of NHPA established the National Register maintained by the National Park Service, advisory councils on Historic Preservation, State Historic Preservation Offices, and grants-in-aid programs. Section 106 of the NHPA requires all federal agencies to consult the Advisory Council before continuing any activity affecting a property listed on or eligible for listing on the National Register. The Advisory Council has developed regulations for Section 106, to encourage coordination of agency cultural resource compliance requirements under Executive Order 11593 and NEPA with those of Section 106.

- National Environmental Policy Act (NEPA)

  The National Environmental Policy Act of 1969 requires federal agencies to foster environmental quality and preservation. Section 101(b)(4) declares that one objective of the national environmental policy is to "preserve important historic, cultural, and natural aspects of our national heritage... ." For any major federal actions

significantly affecting environmental quality, federal agencies must prepare, and make available for public comment, an environmental impact statement (EIS).

- Native American Graves Protection and Repatriation Act

The Native American Graves Protection and Repatriation Act of 1990 (NAGPRA) (PL 101–601) vests ownership or control of certain human remains and cultural items, excavated or discovered on federal or tribal lands, in designated Native American tribes, organizations, or groups. The Act further: requires notification of the appropriate Secretary or other head of any federal agency upon the discovery of Native American cultural items on federal or tribal lands; proscribes trafficking in Native American human remains and cultural items; requires federal agencies and museums to compile an inventory of Native American human remains and associated funerary objects, and to notify affected Indian tribes of this inventory; and provides for the repatriation of Native American human remains and specified objects possessed or controlled by federal agencies or museums.

Federal Agencies

- National Park Service (NPS)

National Park Service Regulations, National Register of Historic Places (36 CFR 60), set forth procedures for nominating properties to the NRHP, and present the criteria to be applied in evaluating the eligibility of historic and prehistoric resources for listing in the NRHP.

State Regulations

- California Environmental Quality Act (CEQA)

Under the California Environmental Quality Act (Public Resources Code, Section 21000 et seq.; CEQA), a project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment. A historical resource is a resource that is either listed or eligible for listing in the California Register of Historical Resources, listed in a local registry, or determined to be significant by the lead agency. (See Section 5024.1 and Section 21084 of the Public Resources Code.)

A resource eligible for listing on the California Register of Historical Resources (PRC 5024.1, Title 14 CCR, Section 4852) is a resource that:

- Is associated with events or patterns of events that have made a significant contribution to the broad patterns of the history and cultural heritage of California and the United States;
- Is associated with the lives of persons important to the nation or to California's past;
- Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; and
- Has yielded, or may be likely to yield, information important to the prehistory or history of the state and the nation.

The fact that a resource is not listed in, or determined to be eligible for listing in the California Register of Historical Resources, not included in a local register of historical resources (pursuant to section 5020.1(k) of the Public Resources Code), or identified in a historical resources survey (meeting the criteria in section 5024.1(g) of the Public Resources Code) does not preclude a lead agency from determining that the resource may be a historical resource as defined in Public Resources Code sections 5020.1(j) or 5024.1.

The CEQA *Statutes and Guidelines* direct public agencies to avoid damaging effects on historical resources whenever feasible. If avoidance is not feasible, the importance of the resource must be evaluated using the criteria outlined in the Guidelines. Resources deemed not important by CEQA criteria do not require further discussion in the CEQA process.

If the project may damage an important historical resource, it may have a significant effect on the environment. Direct impacts may occur by:

- Physically damaging, destroying, or altering all or part of the resource;
- Altering characteristics of the surrounding environment that contribute to the resource's significance;
- *Neglecting the resource to the extent that it deteriorates or is destroyed. Indirect impacts primarily result from the effects of project-induced population growth. Such growth can result in increased construction as well as increased recreational activities that can disturb or destroy cultural resources; or*
- *The incidental discovery of cultural resources without proper notification.*

CEQA provides guidelines for mitigating impacts to archaeological and historical resources in Section 15126.4. Achieving CEQA compliance with regard to treatment of impacts to significant cultural resources requires that a mitigation plan be developed for the resource(s). Preservation in place is the preferred manner of mitigating impacts to significant historical resources.

If human remains are discovered in any location other than a dedicated cemetery, Section 7050.5(b) of the California Health and Safety Code also must be followed.

State Agencies

- California Department of Parks and Recreation (CDPR)

The principal mission of California Department of Parks and Recreation is to preserve biological diversity, protect natural and cultural resources and provide sites for a variety of recreational activities to California residents and tourists.

- California Office of Historic Preservation (OHP)

The California Office of Historic Preservation is responsible for administration of federally and state mandated historic preservation programs in California. The mission, in partnership with the people of California and governmental agencies, is to preserve and enhance California's irreplaceable historic heritage as a matter of public interest so that its vital legacy of cultural, educational, recreational, aesthetic, economic, social, and environmental benefits will be maintained and enriched for present and future generations.

- California Historical Resources Commission (CHRC)

California Historical Resources Commission (CHRC) is a nine-member board that reviews sites of potential statewide significance and administers the California Register of Historic Places.

- California Native American Heritage Commission

The California Native American Heritage Commission offers guidelines on obtaining information on, and issues recommendations for the documentation of, Native American heritage resources.

- California Department of Transportation (Caltrans) Regulations

  Any project funded or permitted by Caltrans, either directly or through assistance to local governments, is subject to the requirements of federal and state historic preservation laws and regulations. Most Caltrans projects use federal funds or require federal licenses or permits, and are therefore subject to federal environmental laws and regulations. When projects have no federal involvement, only state laws and regulations apply.

  To meet these legal requirements, Caltrans has established detailed guidelines for cultural resources management that are outlined in the Caltrans *Environmental Handbook*, Volume 2. These guidelines set forth the policies and procedures to be followed in order to identify, evaluate, and treat project impacts on cultural resources that might be affected by Caltrans projects. The process outlined in the *Environmental Handbook* is designed to meet the requirements of both federal and state law.

Environmental Setting

Prehistory

The diverse environments of Kern County contain a record of substantial depth and variety for human occupation of the region. Archaeological evidence indicates humans were present on the shores of ancient Buena Vista Lake by approximately 8,000 years ago. A deeply buried cultural stratum at site CA-KER-116, on the western edge of Buena Vista Lake, revealed hunting and butchering artifacts suitable for large game. As the Holocene era progressed and the climate moderated, humans occupied increasingly higher elevation zones in the Coast Ranges, Tehachapi's, and Sierra Nevada.

Research over the last century has documented various cultural histories for the prehistoric peoples of the region. In general terms, the groups living in the southern San Joaquin Valley were larger and more settled, inhabiting permanent villages and exploiting the abundant aquatic and terrestrial resources provided by the lakes and marshes of the valley floor. Groups occupying the mountain and desert regions of the county tended to be smaller and more mobile, ranging over wide territories as they followed the more seasonal, less reliable resources of their territories. These patterns were evident in the native cultures observed by Europeans as they explored and colonized the region beginning in the late eighteenth-century.

- Ethnography

  Many distinct native groups occupied Kern County at the time the Spanish arrived in the 1770s. These included the Southern Valley and Foothill Yokuts, the Interior Chumash (Cuyama and Castac) in the Coast Ranges and westernmost Tehachapis, the Tübatulabal and Kawaiisu of the southern Sierra Nevada and Tehachapis, the Kitanemuk of the eastern Tehachapis, the Tataviam of the western Antelope Valley, and the Panamint Shoshone and Southern Paiute in the desert regions of northeastern Kern County. The Spanish and later observers reported a diverse array of social, political, material, and other cultural traits for these groups, who represented a remarkable variety of distinct languages and dialects.

  After A.D. 1770, the native populations of the San Joaquin Valley (as in many parts of California) were severely impacted by disease and disrupted settlement patterns as a result of Spanish colonial expeditions and mission recruitment. The destruction of the valley's native cultures and societies was completed soon after 1848 by the American invasion.

History

The Spaniards were the first non-Indians to enter the San Joaquin Valley. Pedro Fagés led a group of soldiers through Tejon Pass into the San Joaquin Valley in 1772 (Wallace 1978:459). In 1776, Spanish missionaries visited the area now known as Bakersfield; the event was documented by Franciscan friar Francisco Garcés. In 1827, a beaver trapping expedition led by Jedediah Smith entered the region, signaling the earliest American presence in the area.

Kern County nonetheless remained mostly the province of the various Native American groups and relatively isolated from Euro-American influences until 1853, when gold was discovered in the rugged hills near the Greenhorn Mountains along the lower Kern River. Thousands of gold-seekers poured into the Kern River valley, many of which settled in the region after much of the gold mining ended.

Modern Bakersfield evolved in part from the reclamation of swamplands known as Kern Island. First settled in 1860 by Christian Bohna, Kern Island was initially developed in 1863 by Colonel Thomas Baker and his family. In 1866 the California legislature created Kern County, naming Havilah as the county seat. By 1873 the Southern Pacific Railroad had laid track through Kern County and founded the town of Delano. Bakersfield became an incorporated city in 1874 and that same year displaced Havilah as the county seat. The railroad also facilitated creation of many other Kern County communities, including Caliente (1875), Bealville (1875), Tehachapi (1876), Mojave (1876), and Rosamond (1877).

In 1899, rich oil fields were discovered near McKittrick (State Historical Landmark No. 376), and a new wave of immigration was underway in Kern County. Agriculture became prominent in the twentieth century, with cotton as the primary crop.

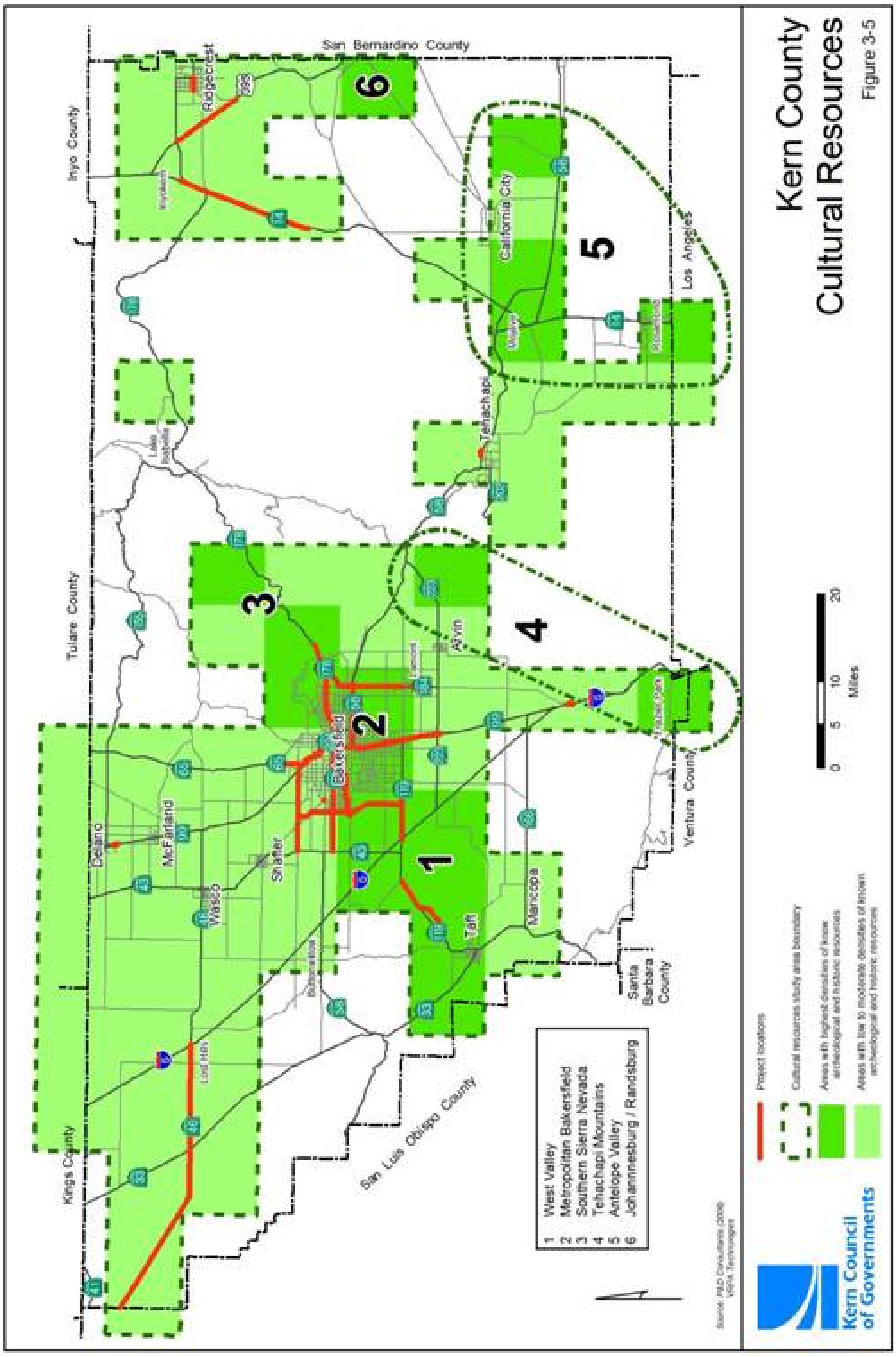
Archaeology and Historic Resources

Records of archaeological and historical sites and investigations in Kern County repose at the Southern San Joaquin Valley Information Center of the California Historical Resources Information System (CHRIS) at California State University, Bakersfield. A review of Kern County data on file at the Information Center revealed several areas where large numbers of archaeological or historical resources have been recorded, and other areas that have not been examined. Figure 3-5 shows areas with the greatest density of cultural resources vis-à-vis proposed transportation improvement project locations. It is important to note that the density of known sites in a given area may be a function of cultural resources survey coverage and documentation rather than actual or potential resource density. Broadly speaking, fewer cultural resources investigations have occurred in undeveloped or remote areas than in developed areas, and thus fewer sites are recorded in those areas.

A brief summary of the data found at the Information Center is presented below. The data are organized by subregion, reflecting local geography and the known resources of the area. *This research is in no way designed to replace the more comprehensive records search required once specific individual improvement project details are know (see Recommended Mitigation Measures, below).*

- West Valley

  This area includes the ancient Buena Vista and Kern lakebeds, as well as historic resources associated with the development of the Midway-Sunset, Elk Hills, and other oil fields. Many large, complex, and deep prehistoric sites are documented near the old shorelines of both Buena Vista and Kern lakes, including some of the most ancient sites known in all of California.


Kern County
Cultural Resources
Figure 3-5
Inyo County
San Bernardino County
Tulare County
Kings County
Ventura County
Los Angeles
Santa Barbara County
San Luis Obispo County
Ridgecrest
California City
Tehachapi
Bakersfield
Delano
McFarland
Wasco
Shafter
Taft
Maricopa
Arvin
1 West Valley
2 Metropolitan Bakersfield
3 Southern Sierra Nevada
4 Tehachapi Mountains
5 Antelope Valley
6 Johannesburg / Randsburg
Miles
Kern Council of Governments

Development of the West Side oil fields began in the late nineteenth-century, and boomed with the construction of rail lines linking the main production areas to Bakersfield and Los Angeles. The communities of Taft, Fellows, and Maricopa were founded in the first decade of the twentieth century as the oil boom accelerated, and the Midway-Sunset field eventually became the top-producing oil field in the United States. Historic resources in this area include wells, platforms, and other oil production features, as well as features associated with the Sunset Western Railroad (incorporated 1908).

- Metropolitan Bakersfield

The Metropolitan Bakersfield area contains a variety of historic resources including buildings, oil fields, farm labor camps and supply centers, and historical monuments. Many of these resources are listed on the National Register of Historic Places and/or the California Register of Historic Resources. In addition, numerous prehistoric archaeological sites have been recorded in the area.

- Tehachapi Mountains

The Tejon area near Lebec contains numerous historic resources associated with Fort Tejon, established in 1854 to protect the Sebastian Indian Reservation. Fort Tejon is a State Historic Park and listed on the National Register of Historic Places. The Castac Valley, now the route of Interstate 5, is also rich in Native American archaeological sites. High densities of archaeological sites have also been recorded in the Bear Mountain area along State Highway 223 northeast of Arvin.

- Southern Sierra Nevada

This area contains numerous prehistoric and historic resources along the lower Kern River. Historic resources include those associated with the 1850's Kern River area gold rush and other resources relevant to early settlement of the area. A California Historic Landmark on State Highway 178 commemorates Father Garcés' crossing of the Kern River in 1776.

- Antelope Valley

Edwards Air Force Base and the Rosamond area have been relatively well studied. Particularly high-densities of prehistoric resources are found in the Rosamond Hills.

In the Mojave-California City area lie remnants of the historic Twenty Mule Team Road, over which wagons hauled borax from Death Valley to Mojave between 1884-1889. Historic resources associated with the Southern Pacific Railroad have also been recorded in the area.

- Johannesburg/Randsburg

This area contains high densities of historic resources associated with the Rand Mining District, first developed in 1895. The area experienced multiple booms until the mid-twentieth century, including a silver bonanza in the 1920's. The entire Rand Mining District is a California Historic Landmark (#938).

Environmental Impacts, Mitigation Measures, and Significance After Mitigation

Methodology

Applied EarthWorks, Inc. (Æ) reviewed existing archaeological and ethnographic data including the site records and survey coverage base maps on file at the Southern San Joaquin Valley Information Center of the California Historical Resources Information System at California State University, Bakersfield. To assess potential impacts on cultural resources from implementation of the projects and programs contained in the 2007 RTP, Æ analyzed the distribution of known archaeological sites and previously recorded cultural resources in and around each of the proposed individual improvement project areas. Æ also updated the 1998 RTP and inclusive EIR (pgs. 5-46 – 5-50) to reflect recent changes in CEQA, its guidelines, and governing case law; and to take into account changes and improvements in professional standards, methods, and practices. VRPA has reviewed this previous work, and updated sections in this 2011 RTP EIR as appropriate.

Thresholds of Significance

Implementation of the Project result in a significant impact on cultural resources if it exceeds the CEQA thresholds defined below.

- Causes a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 of the CEQA guidelines;
- Directly or indirectly destroys a unique paleontological resource or site or unique geologic feature; and
- Disturbs any human remains, including those interned outside formal cemeteries.

3.6.1 Impacts – Cultural and Historic Resources

Cultural resources may be encountered during development of projects proposed in the 2011 RTP. These resources may include, but are not limited to, prehistoric and historical archaeological sites, paleontological sites, historical buildings, and structures associated with agriculture, mining, and petroleum development. Properties important to Native American communities and other ethnic groups, including tangible properties possessing intangible traditional cultural values, also may be present. Such resources may exist individually, in groupings of modest size, or in districts covering substantial geographies.

Cultural resources are most likely to be impacted by construction of new highways or widening or realignment of existing roadways. Bridge replacements or crossings, interchange improvements, new right-of-way acquisition, and other types of projects that involve ground disturbance might also impact cultural resources. Projects associated with transportation system operations or maintenance, such as pavement maintenance and installation or replacement of signals, are less likely to impact cultural resources. Since the specific rights-of-way and alignments of many proposed projects have not been finalized, and other requirements are unknown at present, individual improvement project-specific records searches, background research, and field studies were not performed for this SEIR. To comply with state and federal law, however, such studies must be undertaken in subsequent and individual improvement project EIRs/EISs to identify individual improvement project-specific direct and indirect impacts and develop appropriate mitigation measures. General procedures for accomplishing these objectives, and likely avenues for mitigation of potential individual improvement project impacts, are the subject of this SEIR.

Direct impacts can be assessed by identifying the types and locations of proposed development, determining the exact locations of cultural resources within the individual improvement project area, assessing the significance of the resources that may be affected, and determining the nature of individual improvement project effects on significant resources. Appropriate impact mitigation will be based on the nature of the resources, their locations vis-à-vis the individual improvement project, and the extent of impacts.

Indirect impacts result primarily from the effects of Project-induced population growth. Such growth can result in increased construction as well as increased recreational activities that can disturb or destroy cultural resources. Due to their nature, indirect impacts are much harder to assess and quantify.

Mitigation Measures

Individual improvement project-specific impacts on cultural resources will be identified at the earliest planning stages of the individual improvement project. Since avoidance is the preferred means for mitigating impacts on cultural resources, cultural resource specialists should be included on the individual improvement project planning teams and records searches, background research, Native American consultations, field inventories, and other investigations should be performed during initial routing studies or other comparable planning activities. To comply with state and federal laws and regulations governing cultural resources, the following specific activities will be completed prior to certification of the subsequent or individual improvement project EIR/EIS or other CEQA/NEPA documents.

- Records Searches

  For each individual improvement project, a records search will be performed at the Southern San Joaquin Valley Information Center of the California Historical Resources Information System, housed at California State University, Bakersfield. Resources to be examined at the Information Center include site location and survey coverage base maps, listings on the National Register of Historic Places and California Register of Historic Resources, State Historic Property Data Files, National Register of Determined Eligible Properties, California Historical Landmarks, California Points of Historic Interest, and California Office of Historic Preservation Archaeological Determinations of Eligibility. As appropriate for each individual improvement project, background research will also be conducted at city and county historical societies, libraries, museums, and other institutions that may have relevant information on the nature and location of cultural resources within the individual improvement project area.

- Native American Consultation

  For each individual improvement project, contact the Native American Heritage Commission (NAHC) in Sacramento and request a search of their Sacred Lands File for information on the individual improvement project area. The NAHC will also supply a list of Native American representatives whose traditional lands encompassed the individual improvement project area. Those included on the NAHC consultant list will be contacted by letter and follow-up telephone calls to request information about the study area, and to provide them the opportunity to articulate their views on possible impacts of the individual improvement project and appropriate mitigation measures.

- Paleontological Research

  Conduct a records and literature search at the appropriate institutions, review geological maps for potential fossiliferous formations, and prepare an initial assessment of paleontological resource sensitivity in the individual improvement project area. Compile a list of relevant sites and known fossiliferous formations, and assess each individual improvement project's potential to impact paleontologically significant resources.

- Archaeological Survey

  For each individual improvement project, systematically traverse unsurveyed areas on foot using transects spaced 15-20 meters apart. Previously surveyed areas, as indicated by the Information Center survey coverage base maps, will be resurveyed if prior surveys were completed more than ten years previously or if survey coverage was insufficient due to conditions at the time. Historical or prehistoric archaeological sites discovered within or immediately adjacent to the survey area will be documented according to current professional standards on the appropriate Department of Parks and Recreation forms (DPR-523). Previously recorded sites will be revisited, and their documentation will be updated to the current formats and standards. All sites, features, and isolates will be photographed using 35-millimeter and/or digital pictures, and their locations plotted on the appropriate USGS topographic 7.5' quadrangle. Planimetric site sketch maps will be prepared for each archaeological site, depicting site boundaries, concentrations, features, diagnostic artifacts, and areas of disturbance. Site locations will also be plotted using a Global Positioning System.

- Architectural Survey

  Buildings, structures, objects, linear cultural features, and other non-archaeological properties will be inventoried to current professional standards and recorded on the appropriate Department of Parks and Recreation forms (DPR-523). Documentation on previously recorded sites will be updated to the current formats and standards. All resources will be photographed using 35-millimeter and/or digital pictures, and their locations plotted on the appropriate USGS topographic 7.5' quadrangle.

- Significance Evaluation and Impact Assessment

  Any cultural resources that will be directly impacted by a proposed individual improvement project will be evaluated for significance according to the criteria of the National Register and/or California Register, as appropriate. If the boundaries of the resource or its spatial relationship to the impact area are unclear, then boundary definition using more detailed surface and subsurface investigations may be required. Significance evaluations may require additional archival and background research, additional field documentation, or other studies. Evaluation of archaeological properties may require test excavations, backhoe trenching, or other forms of subsurface investigation; laboratory processing and analysis of recovered remains; and a variety of special technical studies. These evaluations will define the qualities of the resource that make it significant and assess site integrity as a means for judging the nature and extent of individual improvement project impacts. Significance evaluations and impact assessments will be performed by appropriately qualified specialists meeting the Secretary of Interior's Professional Qualifications Standards (FR 190: 44740–44741). Artifacts and other remains collected from the field, along with field records and other documentation, will be curated at the Museum of Anthropology, California State University, Bakersfield, or another institution capable of providing secure, long-term storage, care, and access to the public.

- Technical Report/EIR Sections

  Prepare a technical report documenting the results of the records search, background research, Native American consultation, paleontological research, field surveys, resource evaluations, and other studies. Because these reports may detail locations within the individual improvement project areas known to be culturally and paleontologically sensitive, they will be confidential technical appendices to each EIR/EIS. Summary sections included in the body of the EIR/EIS will not disclose sensitive site location information. The confidential technical report and EIR/EIS sections will discuss the importance of historical, archaeological, and paleontological resources identified during the study, identify the potential for significant impacts, and discuss adequate and feasible mitigation measures. The reports will adhere to professional standards outlined by the

State Office of Historic Preservation in *Archaeological Resource Management Reports (ARMR): Recommended Contents and Format* (Jackson 1990).

- Agency Consultation

For federally entailed projects, the lead federal agency must consult with the State Historic Preservation Officer (SHPO) regarding the identification, evaluation, and subsequent mitigative treatment of cultural resources. The SHPO does not play a role in the CEQA process unless state lands, state-owned properties, or unusually important resources are involved. For federal projects, the SHPO is asked to review and concur with the federal agency's findings regarding the significance of resources and the appropriate treatment. Initial consultation with the SHPO should occur early in the planning process, with follow-on consultation and review at each stage.

If the studies described above determine that significant cultural resources will be affected by the proposed individual improvement project, then additional impact mitigation may be required if the individual improvement project cannot be redesigned to avoid the resource. Impact mitigation may take a variety of forms depending on the nature of the site and the nature and extent impacts. As noted above, site avoidance is the preferred mitigation measure. If resources cannot be avoided entirely, portions of the resources outside the impact area may be preserved in an exclusion zone—a fenced area where construction equipment and personnel are not permitted. Together, avoidance and use of exclusion zones ensures the maximum *in-situ* preservation of significant cultural resources.

Where avoidance is infeasible and significant cultural resources are jeopardized by a individual improvement project, one or a combination of the following measures will be implemented:

- Data recovery excavation;
- Additional analysis of existing collections;
- Additional archival/historical research;
- Photographic documentation; and
- Archaeological monitoring during construction, followed by data recovery excavation or other appropriate measures if significant archaeological remains are exposed.

Final decisions regarding impact mitigation will be made in consultation among the individual improvement project proponent, regulatory agencies, technical specialists, and other interested parties. If data recovery excavation is the recommended mitigation, then the EIR/EIS must include a data recovery plan. Data recovery will be supervised by appropriately qualified specialists meeting the Secretary of Interior's Professional Qualifications Standards (FR 190: 44740–44741). Artifacts and other remains collected from the field, along with field records and other documentation, will be curated at the Museum of Anthropology, California State University, Bakersfield, or another institution capable of providing secure, long-term storage, care, and access to the public.

It should be noted that photographic documentation or other records of historical buildings or structures prepared to the standards of the Historic American Building Survey or Historic American Engineering Record (commonly referred to as HABS/HAER standards) may constitute appropriate treatment of effects according to federal regulations, but may not mitigate individual improvement project impacts to a level of less than significant according to CEQA standards and its defining case law.

Significance After Mitigation

The recommended mitigation measures would require individual improvement project proponents to follow a comprehensive procedure to assess the magnitude of impacts, and to avoid or mitigate the impacts, if necessary.

However, due to the size and potentially large number of resources that could be disturbed as a result of the projects in the 2011 RTP, cumulative impacts to cultural resources would remain a potentially significant impact at a regional level.

Impact 3.6.2 – Construction Impacts

Construction activities shall avoid known paleontological resources, if feasible, especially if the resources in a particular lithic unit formation have been determined through detailed investigation to be unique.

When a construction activity could significantly disturb soils or geologic formations in areas identified as having a moderate to high potential to support paleontological resources, a qualified researcher must be stationed on-site to observe during excavation operations and recover scientifically valuable specimens. As part of this mitigation, the following actions should be taken:

- A certified paleontologist shall be retained (or required to be retained) by the project implementing agency prior to construction to establish procedures for surveillance and the preconstruction salvage of exposed resources if fossil bearing sediments have the potential to be impacted.
- The monitor shall provide preconstruction coordination with contractors, oversee original cutting in previously undisturbed areas of sensitive formations, halt or redirect construction activities as appropriate to allow recovery of newly discovered fossil remains, and oversee fossil salvage operations and reporting.
- This measure shall be placed as a condition on all plans where excavation and earthmoving activity is proposed in a geologic unit having a moderate or high potential for containing fossils.
- Excavations of paleontological resources should be overseen by the qualified paleontologist and the paleontological resources given to a local agency, or other applicable institution, where they could be displayed or used for research.

Where practicable, routes and project designs that would permanently alter unique geologic features shall be avoided.

Significance After Mitigation

The recommended mitigation measures would require individual improvement project proponents to follow a comprehensive procedure to assess the magnitude of impacts, and to avoid or mitigate the impacts, if necessary. However, due to the size and potentially large number of resources that could be disturbed as a result of the projects in the RTP, cumulative impacts to cultural resources would remain a potentially significant impact at a regional level.

Cumulative Impacts 3.6.3

Growth and development in Kern County will increase substantially by 2035. The 2011 RTP, by increasing mobility and by inclusion of transportation measures, influences the pattern of this development. The 2011 RTP's influence on growth contributes to regional impacts to existing historic resources and previously undisturbed and undiscovered cultural resources, as described in Impacts 3.6.1 and 3.6.2 above.

This impact would be cumulatively considerable.

The amount of new developed acreage (consuming previously vacant, open space/recreation and agricultural land) from transportation and land use policies in the 2011 RTP would be considerable when compared to the No Build or No Project Alternatives. This degree of development is reasonably foreseeable; however, to assign this future development to precise locations would be speculative, such that it cannot be estimated where cultural resources would be affected. Despite the inability to predict the acreage of previously undisturbed land that may be affected, it

is reasonable to expect that this future development would contribute to the same types of impacts detailed in Impacts 3.6.1 and 3.6.2 above.

These effects are considered a significant cumulative impact.

Mitigation Measures

The cumulative impacts to cultural resources, due to the forecast growth and development associated with the 2011 RTP, would be mitigated using the same measures detailed for Impacts 3.6.1 and 3.6.2, in addition to the following measure.

- Future impacts to cultural resources shall be minimized through cooperation and information sharing between the implementation agency and affected resource agencies.

Significance After Mitigation

The impacts to cultural resources due to regional scale growth would be reduced through application of the mitigation measures, however implementation of the 2011 RTP's transportation improvement projects to accommodate growth and development in Kern County (as reflected in adopted local agency general plans) would contribute to cultural resource impacts. Impacts to cultural resources from the 2011 RTP would be cumulatively considerable.

3.7 GEOLOGY & SOILS

Introduction

Kern County encompasses 8,171 square miles and is defined by distinct geological features, including the nearly level alluvial plains of the San Joaquin Valley, the arid valleys of the Mojave Desert, and the mountains of the southern Sierra Nevada and Transverse Ranges. Elevations in the county range widely from 206 feet above sea level near the City of Delano to the highest point at 8,755 feet at the summit of Sawmill Mountain on the south line of the County. San Joaquin Valley lies mostly below 1,000 feet, and the Mojave Desert area lies primarily between 2,000 and 3,000 feet.

Kern County covers portions of five of the eleven geologic provinces of California (reference Figure 3-6). These provinces include the southeastern Coast Ranges, the Great Valley of California, the southern Sierra Nevada, the southwestern tip of the Basin Ranges, and the western end of the Mojave Desert. Each province differs from the others in the nature of its geologic history.[1]

- Coast Ranges – The segment of the Coast Ranges province that lies within Kern County is characterized by north-northwest trending mountain ranges of moderate relief. These ranges are underlain primarily by folded marine sedimentary rocks and are cut by the San Andreas Fault. Within the Coast Ranges province, sedimentary rocks trend mostly north-northwest and are moderately to mildly deformed along folds parallel to the mountain ranges.

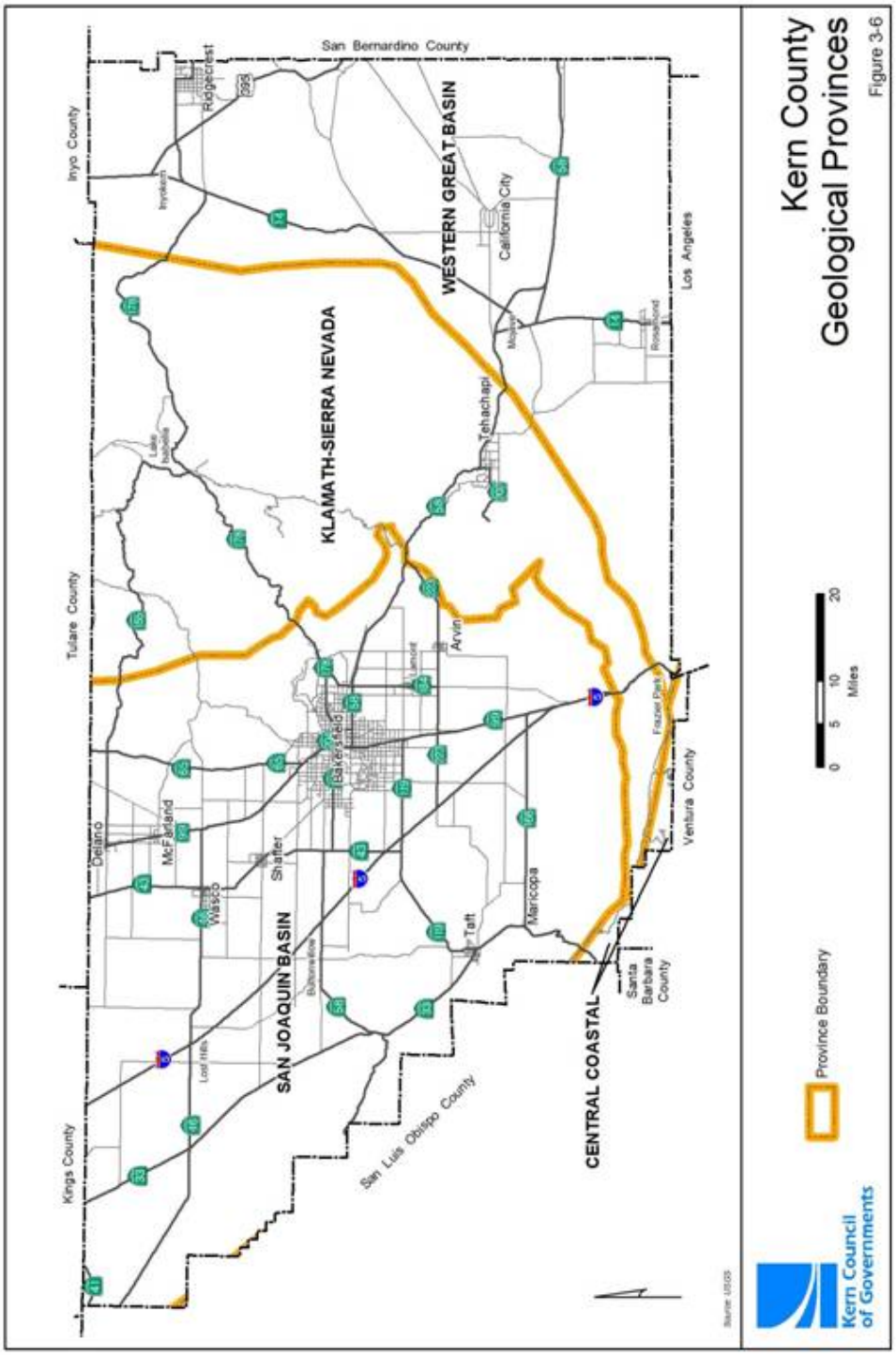
- Sierra Nevada – The southern Sierra Nevada province, comprising the southern Sierra Nevada and Tehachapi Mountains, contains most of the high mountains in Kern County. Granitic rocks underlie most of the southern part of the province and are part of the Sierra Nevada batholith.

- Basin Ranges – Only the small southwestern tip of the Basin Ranges province, which includes several hundred thousand square miles in eastern California, southeastern Oregon, Nevada, and western Utah, lies in Kern County. This portion of the Basin Ranges consists of the El Paso Mountains, which form the southern boundary of the province. The El Paso Mountains contain Mesozoic granitic rocks (between 65 and 240 million years old), as well as the only Paleozoic rocks in the County (240-590 million years) that have yielded well-preserved fossils.

- Great Valley – The southern part of the Great Valley province is a nearly flat, north trending trough bounded by the Coast Ranges, San Emigdio Mountains, and Sierra Nevada. Sedimentary rocks, largely of marine origin, underlie a relatively thin cover of alluvium.

- Mojave Desert – Fifty-five miles of the Mojave Desert lying south of the Basin Ranges province, forms a wedge that is bounded by the San Andreas and Garlock faults. The northwest part of this wedge lies in southeastern Kern County. Isolated buttes and small mountain masses of moderate to low relief are irregularly distributed on the gently undulating desert floor. Most of the area is underlain by granitic rock, with outcroppings of sedimentary and igneous rock.

[1] California Division of Mines and Geology, Mines and Mineral Resources of Kern County, California, County Report 1 (1962)


Kern County
Geological Provinces
Figure 3-6
San Bernardino County
Inyo County
Tulare County
Kings County
Los Angeles
Ventura County
Santa Barbara County
San Luis Obispo County
WESTERN GREAT BASIN
KLAMATH-SIERRA NEVADA
SAN JOAQUIN BASIN
CENTRAL COASTAL
Province Boundary
0 5 10 20
Miles
Kern Council of Governments

Regulatory Setting

Federal Agencies and Regulations

- United States. Department Of Agriculture, Natural Resources Conservation Service (NRCS)

  Working through existing programs, USDA joins with State, tribal, or local governments to acquire conservation easements or other interests from landowners. The NRCS maps soils and farmland uses to provide comprehensive information necessary for understanding, managing, conserving and sustaining the nation's limited soil resources. In addition to many other natural resource conservation programs, the NRCS manages the Farmland Protection Program, which provides funds to help purchase development rights to keep productive farmland in agricultural uses.

State Agencies and Regulations

- California Department of Conservation

  The State of California created the Farmland Mapping and Monitoring Program within the California Department of Conservation in 1982 to provide maps and statistical data for use in planning for the best utilization of California's agricultural resources. The California Land Conservation Act of 1965, also known as the Williamson Act, is designed to preserve agricultural and open space lands by discouraging their premature and unnecessary conversion to urban uses. Williamson Act contracts, also known as agricultural preserves, offer tax incentives for agricultural land preservation by ensuring that land will be assessed for its agricultural productivity rather than its highest and best uses.

- California Building Code

  Under state law, all building standards must be centralized in Title 24 or they are not enforceable. The *California Building Code* is another name for the body of regulations contained in Title 24, Part 2, of the California Code of Regulations, which is a portion of the California Building Standards Code (CBSC, 1995). Title 24 is assigned to the California Building Standards Commission which, by law, is responsible for coordinating all building standards. Published by the International Conference of Building Officials, the Uniform Building Code (UBC) is a widely adopted model building code in the United States. The California Building Code incorporates by reference the UBC with necessary California amendments. About one-third of the text within the California Building Code has been tailored for California earthquake conditions. Although widely accepted and implemented throughout the United States, local, city and county jurisdictions can adopt the UBC either in whole or in part.

- Alquist-Priolo Special Study Zones

  The Alquist-Priolo Act's main purpose is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. This Act addresses only the hazard of surface fault rupture and is not directed toward other earthquake hazards. The Alquist-Priolo Earthquake Fault Zoning Act of 1971 requires that special geologic studies be conducted to locate and assess any active fault traces in and around known active fault areas prior to development of structures for human occupancy. This state law was a direct result of the 1971 San Fernando Earthquake, which was associated with extensive surface fault ruptures that damaged numerous homes, commercial buildings, and other structures.

- Seismic Hazards Mapping Act

  The program and actions mandated by the Seismic Hazards Mapping Act closely resemble those of the Alquist-Priolo Earthquake Fault Zoning Act. The Seismic Hazards Mapping Act of 1990 addresses non-surface fault rupture earthquake hazards, including liquefaction and seismically-induced landslides. The purpose of the Act is to protect the public from the effects of strong ground shaking, liquefaction, landslides, or other ground failure, and other hazards caused by earthquakes.

- Surface Mining Area Reclamation Act (SMARA)

  Local agencies are required to use the classification information when developing land use plans and when making land use decisions. SMARA was enacted by the California Legislature to address the need for a continuing supply of mineral resources, and to prevent or minimize the negative impacts of surface mining to public health, property and the environment. SMARA mandates the California Geological Survey (CGS) to provide objective economic-geologic expertise to assist in the protection and development of mineral resources through the land use planning process. The primary products are mineral land classification maps and reports for urban and non-urban areas of the state.

- California Department of Transportation (Caltrans)

  Caltrans' jurisdiction includes rights-of-way of state and interstate routes within California. Any work within the right-of-way of a federal or state transportation corridors is subject to Caltrans' regulations governing allowable actions and modifications to the right-of-way. Caltrans issues permits to encroach on land within their jurisdiction to ensure encroachment is compatible with the primary uses of the State Highway System, to ensure safety, and to protect the State's investment in the highway facility. The encroachment permit requirement applies to persons, corporations, cities, counties, utilities, and other government agencies. A permit is required for specific activities including opening or excavating a state highway for any purpose, constructing or maintaining road approaches or connections, grading within rights-of-way on any state highway, or planting or tampering with vegetation growing along any state highway. The encroachment permit application requirements relating to geology, seismicity and soils include information on road cuts, excavation size, engineering and grading cross-sections, hydraulic calculations, and mineral resources approved under SMARA.

Local Agencies and Regulations

- General Plans and Seismic Safety Element

  Local governments may provide policies and develop ordinances to ensure acceptable protection of people and structures from risks associated with these hazards. City and county governments typically develop as part of their General Plans, safety and seismic elements that identify goals, objectives, and implementing actions to minimize the loss of life, property damage and disruption of goods and services from man-made and natural disasters including floods, fires, non-seismic geologic hazards and earthquakes. Ordinances may include those addressing unreinforced masonry construction, erosion or grading.

Environmental Setting

Seismic and Geologic Hazards

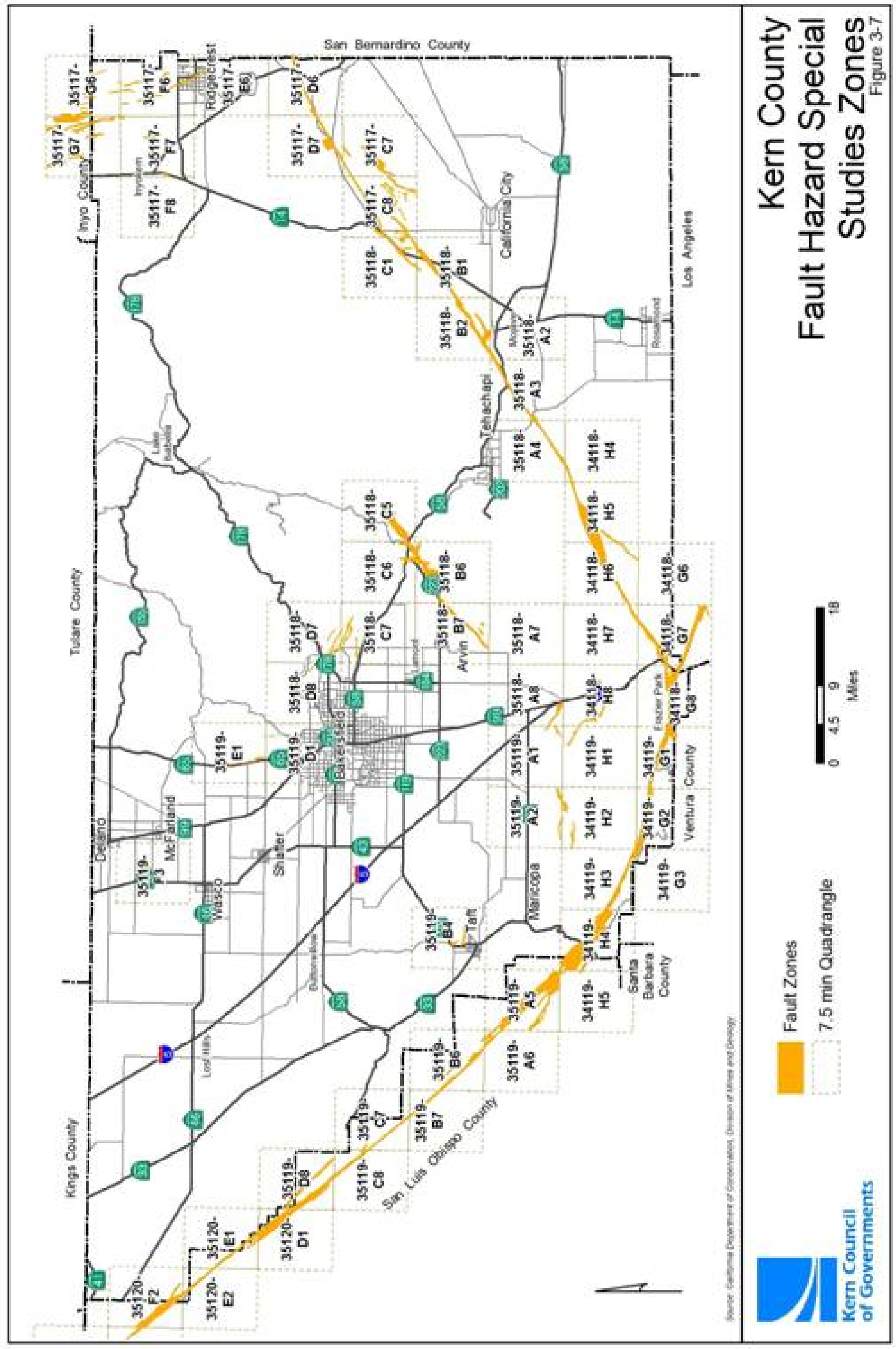
- Faults

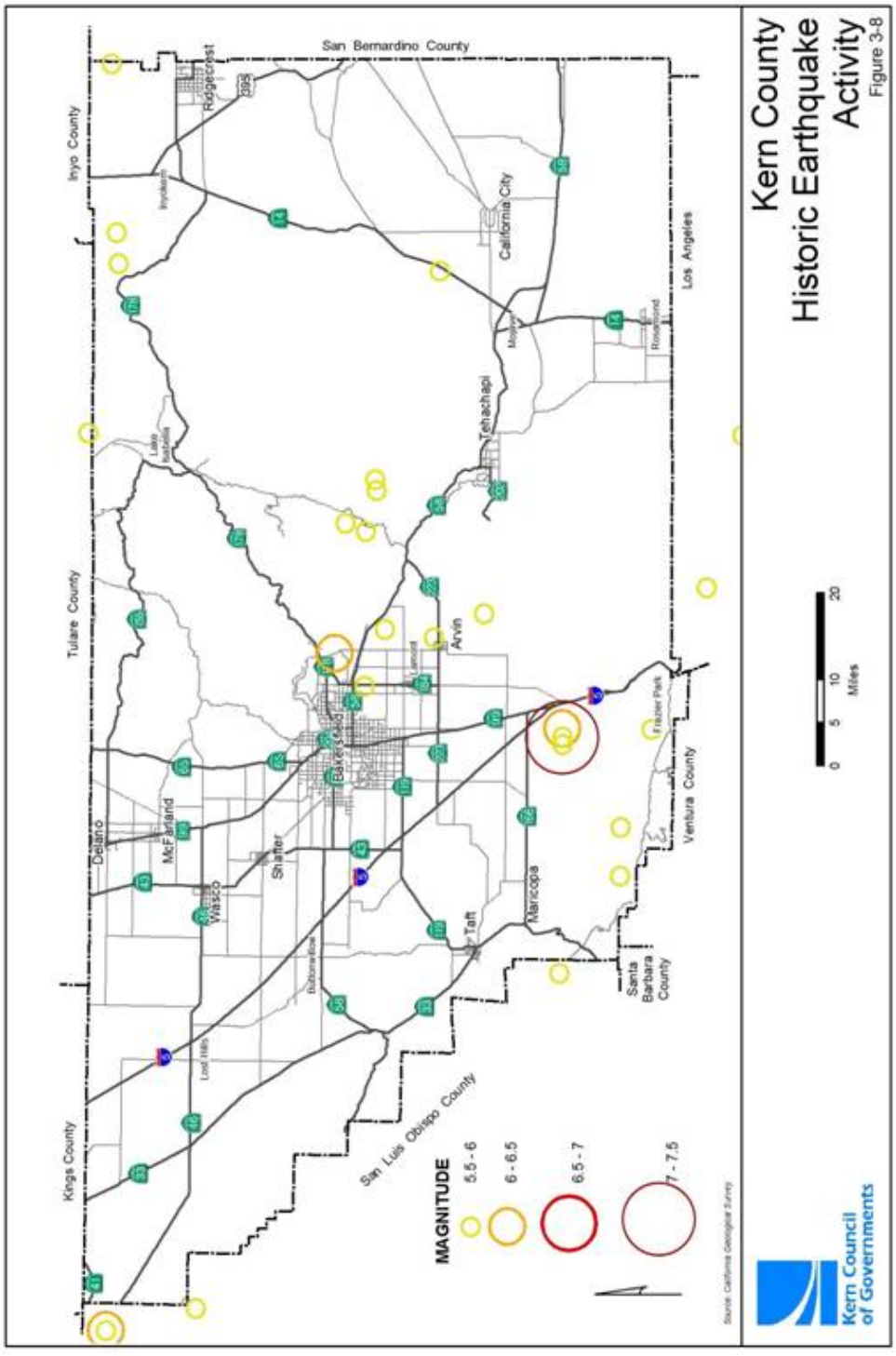
Three significant faults, San Andreas, Garlock, and Sierra Nevada, transect Kern County (reference Figure 3-7). Historic earthquake activity is shown on Figure 3-8. The San Andreas Fault is at least 600 miles long and runs along the western edge of the County; it is considered the boundary between the North American Plate and the Pacific Plate. Although the geologic history of displacements (movement) along the San Andreas Fault is a difficult study area for scientists, it is clear that the San Andreas system holds the greatest energy potential in terms of the Richter Scale (reference Table 3-13).

TABLE 3-13
Major Potentially Active Faults in Kern County

Fault	Type/Dip Direction	Recent Faulting/ Recurrence	Slip Rate (mm/yr)	Maximum Moment Magnitude (Richter Scale)
Airport Lake Fault Zone	Normal, some lateral strike slip	Historic (1995)/ Unknown	~1	5.5 to 7.0
Big Pine	Left lateral strike/south	Late/pre Quaternary/ Unknown	1 to 4	Uncertain
Garlock	Left lateral strike slip	Historic, Holocene/ 200-3,000 years	6	6.5 to 7.1
Little Lake Fault Zone	Right lateral	Holocene/ Unknown	~1	5.5 to 7.0
Lockhart	Right lateral strike slip	Late Quaternary (Kern County Segment)/3,000-5,000 years	0.8	6.5 to 7.4
Plieto Thrust	Thrust/South	Holocene/Uncertain	1.4	6.3 to 7.3
San Andreas	Right lateral slip	Historic (1857) Varies: 20-300 years	20-35	6.8 to 8.0
Sierra Nevada	Normal	Holocene/Unknown	>1	6.0 to 7.1
Wheeler Ridge	Thrust/South	Historic (1995)/ Unknown	unknown	6.0 to 7.1
White Wolf	Left lateral reverse/south	Historic/Unknown	2	7.2

Source: Kern County, Multi-Hazard Mitigation Plan, November 2005.


Kern County
Fault Hazard Special
Studies Zones
Figure 3-7
Fault Zones
7.5 min Quadrangle
Miles
Kern Council of Governments
San Bernardino County
Tulare County
Kings County
Inyo County
Los Angeles
Ventura County
Santa Barbara County
San Luis Obispo County
Bakersfield
Tehachapi
California City
Ridgecrest
Delano
McFarland
Wasco
Shafter
Arvin
Taft
Maricopa


Kern County
Historic Earthquake Activity
Figure 3-8
San Bernardino County
Inyo County
Tulare County
Kings County
San Luis Obispo County
Santa Barbara County
Ventura County
Los Angeles
Ridgecrest
California City
Tehachapi
Arvin
Lamont
Frazier Park
Bakersfield
Delano
McFarland
Wasco
Shafter
Taft
Maricopa
Lake Isabella
Lost Hills
Buttonwillow
Rosamond
Mojave
Inyokern
MAGNITUDE
5.5 - 6
6 - 6.5
6.5 - 7
7 - 7.5
0 5 10 20
Miles
Kern Council of Governments
Source: California Geological Survey

The Garlock fault is 150 miles long and extends northeastward through the central part of the Tehachapi Mountains, extending along the southeast flank of the Tehachapi, Sierra Nevada, and El Paso mountains. The south end of the Garlock fault is terminated by the San Andreas Fault near Frazier Park. The fault is assumed to be active and capable of a very strong event (up to magnitude 8.0), although the last great earthquake on the Garlock Fault is not known, nor is the fault's occurrence interval known.

The Sierra Nevada fault system extends more than 300 miles, along the entire eastern front of the Sierra Nevada Range. This fault is exposed near the mouth of Jawbone Canyon where it terminates against the Garlock fault. Northward from this termination point, it follows a poorly exposed, irregular course.

Other faults of regional significance are in the Kern Canyon-Breckenridge-White Wolf system, which cuts southwesterly through the central part of the Sierra Nevada. The White Wolf fault has been studied intensively by seismologists and geologists since the Arvin-Tehachapi earthquake occurred along it in 1952. The Kern River fault, a west-dipping fault exposed at the mouth of the Kern River, is one of few faults exposed along the western front of the Sierra Nevada. Table 3-13 illustrates the maximum Richter magnitude of these and other regional faults.

Other faults of minor significance located in Kern County include Lockhart, Little Lake, Wheeler Ridge and Airport Lake fault zones.

- Ground Shaking

Kern County is located in one of the more seismically active areas of California and may, at any time, be subject to moderate or severe ground shaking[2]. Ground shaking hazards exist because of stress that accumulates deep within the earth. This stress, or elastic strain, becomes so great that the rock can no longer be contained as a single rock mass and, therefore, breaks. Movement along a fracture zone occurs, and an enormous amount of energy is released. This movement may or may not produce a surface fault rupture. At any given location, the amount of the resulting shaking motion caused by the sudden movement depends, to a large extent, on local ground conditions (including the degree of water saturation), and may be as severe ten miles from the fault as immediately adjacent to it.

Identified faults must be considered in planning and land use activities, and faults identified as active deserve special consideration. No structure, including roadway bridges, should be built astride an active fault. Similarly, utilities that cross such faults must be designed to remain functional even after fault movement. Historic fault movements are illustrated on Figure 3-7.

The Kern County Engineering and Survey Services Department estimates that there is between a one-to-ten-percent chance of an earthquake occurring by 2007, with a magnitude affecting more than 50 percent of the County[3].

[2] Safety Element of the Kern County General Plan, Kern County Planning Department, 2007
[3] Kern County Multi-Hazard Mitigation Plan, November 2005.

- Ground Failure

Kern County has a diversity of microenvironments and activities that have the potential for ground failure. Factors that cause or contribute to ground failure can include, but are not limited to, soil type and condition, bedrock condition, presence of moisture, presence or lack of vegetation, ground slope, seismic activities, and human activities. Kern County's General Plan and Multi-Hazard Mitigation Plan identify specific types of ground failure and provide local data as presented below.

- Landslides – The severity of landslide problems depends on the local soil and bedrock conditions, including moisture content, slope, and vegetation. Human activities also tend to destabilize earth materials and thus increase the chance of ground failure. Human-induced causes include the cutting of slopes for roadways, overloading slopes with artificial fill, extensive irrigation, poor drainage, excessive groundwater withdrawal, and the removal of stabilizing vegetation. Added moisture injected into the soils by water and sewer systems tends to be detrimental in unstable areas, and can cause the reoccurrence of landslides in a previously stable area. Southwestern Kern County has a high susceptibility to landslides, and small landslides are common within Kern County's mountain areas as loose material moves naturally down slope.

- Land Subsidence – Land subsidence is occurring within the San Joaquin Valley. This type of ground failure can be aggravated by ground shaking, and is most often caused by the withdrawal of large volumes of fluid from underground reservoirs. Other causes of subsidence include sinking tectonics, oil and gas extraction, and deficient alluvial deposits. Subsidence from any cause accelerates maintenance problems on roads, canals, and underground utilities, and contributes to drainage and flood problems. Seismic activities also aggravate subsidence areas. Maintenance or raising water tables can mitigate effects from subsidence.

- Clay soils – Fine-grained, cohesive clay soils that expand when moisture is added tend to lose their ability to support foundations of structures. Swelling soils usually occurs during the winter and spring rains, and can lead to heaving of highways and roadways, disruption of utility lines, cracked driveways and foundations, and doors and windows that will not open properly. Construction may aggravate the problem caused by adding moisture, and heaving may not occur on the site until six months-to-a-year later. Based on United States Geologic Survey (USGS) mapping, the area mostly likely to be affected by clay soils is a relatively small area north of Bakersfield.

- Liquefaction – Liquefaction occurs when ground shaking produced by earthquakes destabilizes or "liquefies" saturated soils. Liquefaction can occur in certain types of soil, such as loosely consolidated sands, alluvial deposits, or poorly engineered fill. Liquefaction usually occurs in areas that are associated with a shallow water table, within 30 feet of the ground surface. Based on 1999 Kern County GIS data, areas that have a shallow groundwater are primarily on the western side of the County, generally around Interstate 5 and south of Bakersfield. Liquefaction can affect roads, runways and utility lines.

- Erosion – Erosion is the process whereby materials of the earth's crust are worn down, removed by weathering, and deposited in other places by the flow of water, wind and seismic activity. Erosion usually occurs in Kern County during the winter and spring rains, as well as during windstorms. Erosion can be an ongoing, gradual process or a rapid process during wind and flood events. Areas in Kern County where erosion may present a problem include areas that contain one or more of the following: alluvial fans, urban drainage systems, seismic activity, steep slopes, and stripped vegetation because of recent fires. Proper engineering, grading, construction, landscaping, drainage and enforcement can reduce losses associated with erosion[4].

[4] Kern County Multi-Hazard Mitigation Plan, November 2005.

Soils

Soil types within Kern County are as diverse as the County's climate, topography, and underlying geology. Fifty different mapping units are identified on the General Soil Map for the County, named for the major soils series that occur within each unit[5]. A soil series is a group of soils that have similar characteristics and layers.

These mapping units are organized into eight major groups, based on soil characteristics and qualities, including slope. The soil groups, their associated risk of geologic hazard, and their suitability to agricultural uses are briefly described below.

- Group 1 areas are dominated by nearly level coarse-to-moderately-fine textured alluvial soils. This group consists of 13 separate soil associations and is used primarily for sheep grazing, cotton and alfalfa production. Soil corrosiveness ranges widely, depending on the specific soil association.
- Group 2 areas are dominated by gently sloping to moderately steep slope areas, and contain coarse to moderately fine textured alluvial soils. This group contains nine separate soil associations and is used predominantly for grazing, small grain, cotton and alfalfa production, although some soils may support orchards. Shrink-swell and erosion hazards are moderate, as is soil corrosiveness.
- Group 3 areas consist of nearly level clayey soils. This group contains four soil associations and supports cotton, alfalfa, sugar beets and other row crops. Shrink-swell potential for this soil group is severe.
- Group 4 areas are dominated by nearly level soils with dense, very slowly to moderately slowly permeable subsoils or hardpan. This group contains four separate soil associations that support grain crops, cotton and vineyard. Shrink-swell potential for this soil group is very high.
- Group 5 areas are dominated by sloping soils with dense, slowly to moderately slowly permeable subsoils. This group consists of two soil associations that support range uses and shallow root crops. Shrink-swell potential ranges from low to high between the two soil associations.
- Group 6 areas consist primarily of coarse to moderately fine textured, gently sloping to very steep residual soils, and are found mainly above 2,500 feet. This group consists of seven soil associations that are best suited for rangeland, oil and timber production, and wildlife habitat. Shrink-swell potential and erosion hazard is generally severe.
- Group 7 areas are dominated by clayey soils on gently sloping to very steep slopes. This group contains seven soil associations that support citrus production, rangeland, and dry land crops. Shrink-swell and erosion potential are moderate to severe.
- Group 8 areas are dominated by very shallow soils, rock or very coarse textured soils. This group contains four soil associations that are poorly suited for agricultural uses, and its soil associations are subject to flooding and severe erosion, presenting a threat to construction sites.

As indicated above, Soil Groups 3, 4, 6 and 7 present the greatest constraints to development or construction because of sever shrink-swell potential and the high corrosiveness of associated soils. Group 8 also contains severe limitations because of the potential for flooding and erosion.

Mineral Resources

The abundant mineral resources of Kern County have contributed much to the history and development of California. The yearly value of petroleum fuels alone, about 85 percent of the value of all mineral products, ordinarily exceeds the value of agricultural products from the County.

[5] U.S. Dept. of Agriculture Soil Conservation Service, Report and General Soil Map of Kern County (1967, 1988 – Northwestern Part).

Boron, cement, clay, gold, gypsum, pumice, salt, sand and gravel, silver, and tungsten are the other important mineral products of the County exclusive of petroleum. Among these, gold ranks first in total value of the metallic mineral products, silver ranks second, and tungsten third. Clay, limestone products, boron, and sand and gravel are the most highly valued of non-metallic minerals. In recent years, the County has yielded a significant proportion of California's roofing granules.

Nearly all of Kern mineral deposits, exclusive of petroleum fields, are grouped in areas that are referred to as Mining Districts. Kern County contains 16 such districts as illustrated on Figure 3-9. The location of individual mines is displayed on Figure 3-10.

Environmental Impacts, Mitigation Measures, and Significance After Mitigation

Impact 3.7.1

Seismic events can damage transportation infrastructure through ground shaking, liquefaction, surface rupture and landslides.

Property and public safety from seismic activity would be considered a significant impact in some cases.

Mitigation Measures

- Individual improvement project structures will be built by responsible agencies to the seismic standards contained in the most recent edition of the Uniform Building Code (UBC).

- Implementing agencies will ensure that improvement projects located within or across active fault zones comply with design requirements, published by the CGS, as well as local, regional, state, and federal design criteria for construction of projects in seismic areas.

The implementing agencies will guarantee that geotechnical analysis is conducted within construction areas to establish soil types and local faulting prior to individual improvement project design preparation.

Significance After Mitigation

Implementation and monitoring of the above mitigation measures will provide the framework and direction for subsequent individual improvement project-specific mitigation designed to avoid or reduce the identified significant Project impacts to a less than significant level.

Impact 3.7.2

Some improvement projects require significant earthwork, increasing potential slope failure and long-term erosion. Earthwork can also alter unique geologic features. Project impacts would be considered significant in some cases.

Several improvement projects would involve substantial construction of new highway segments within previously undisturbed areas. Some of these projects could require significant earthwork or cuts into hillsides, which can become unstable over time. Road cuts can expose soils to erosion over the life of an individual improvement project, creating potential landslide and falling rock hazards. Engineered roadways can be undercut over time by storm water drainage and wind erosion. Some areas would be more susceptible to erosion than others because of the naturally occurring soils with high erosion potential.

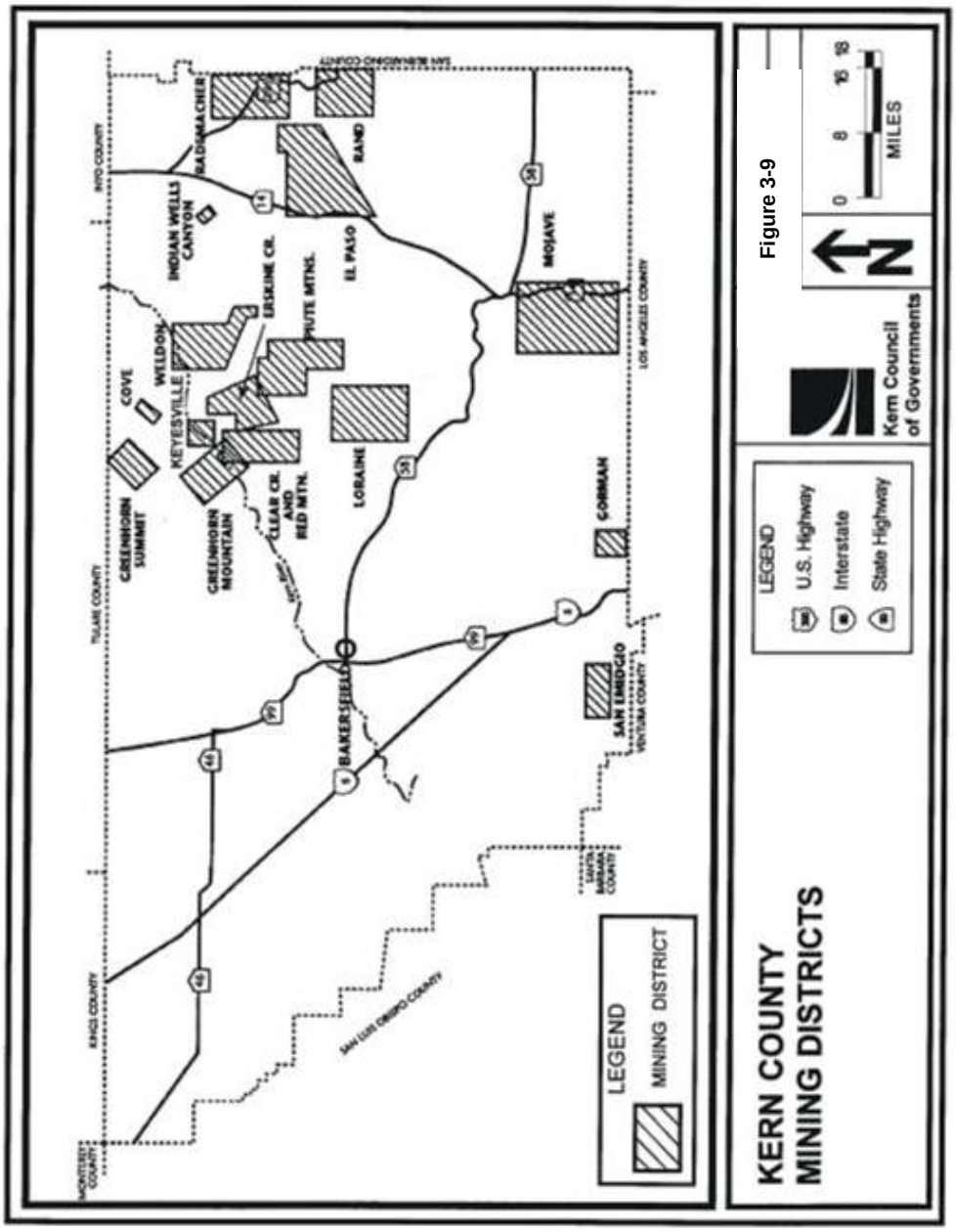
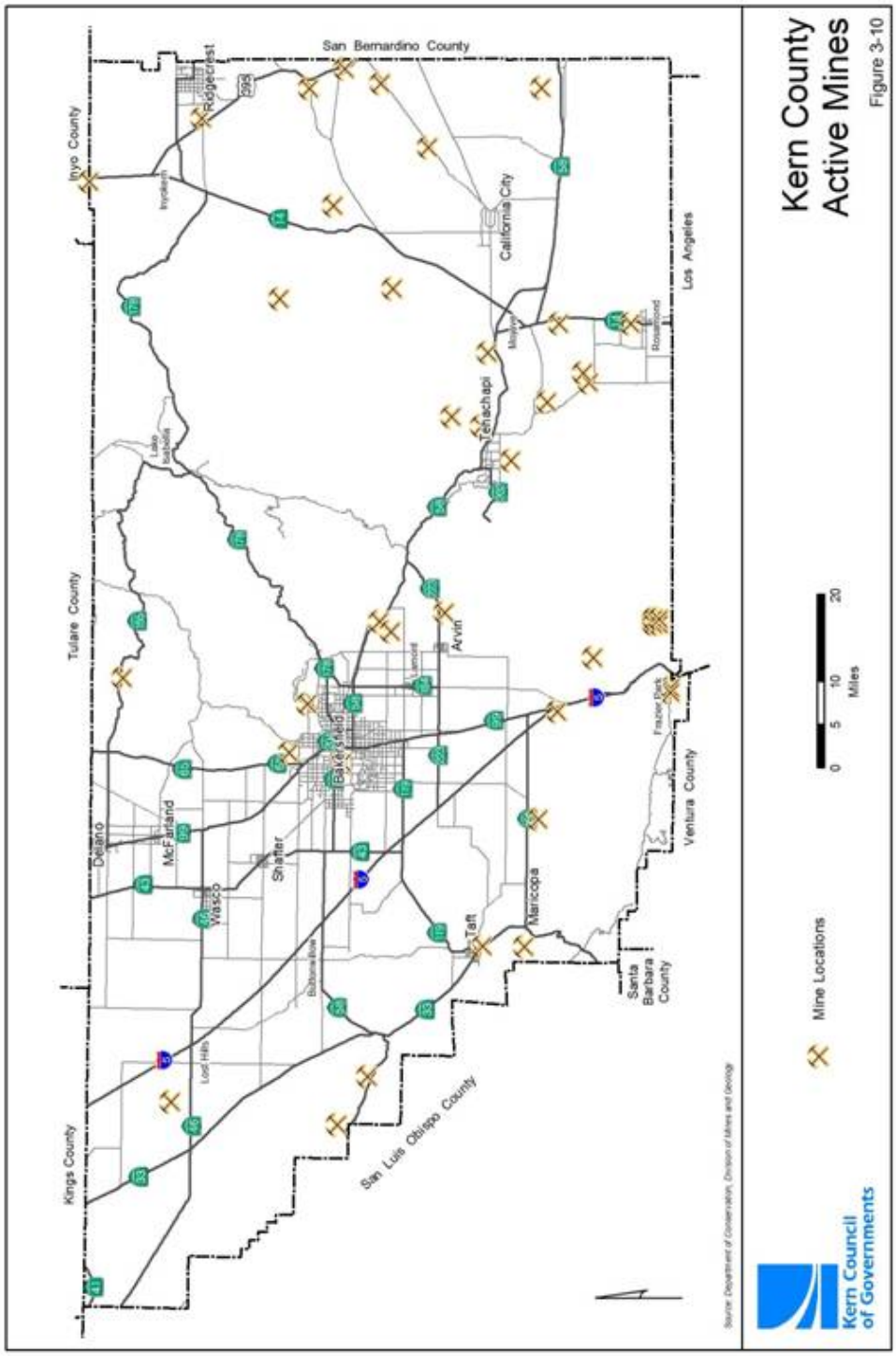

KERN COUNTY
MINING DISTRICTS
LEGEND
U.S. Highway
Interstate
State Highway
Kern Council of Governments
0 8 16 24
MILES
N
LEGEND
MINING DISTRICT
BAKERSFIELD
MOJAVE
RAND
EL PASO
PIUTE MTNS.
ERSKINE CR.
INDIAN WELLS CANYON
RADIGAN CREEK
WELDON
KEYESVILLE
COVE
GREENHORN SUMMIT
GREENHORN MOUNTAIN
CLEAR CR. AND RED MTN.
LORALINE
CORMAN
SAN EMIDGIO
TULARE COUNTY
KINGS COUNTY
SAN LUIS OBISPO COUNTY
SAN BERNARDINO COUNTY
INYO COUNTY
LOS ANGELES COUNTY
VENTURA COUNTY
MONTEREY COUNTY

Figure 3-9


Kern County
Active Mines
Figure 3-10
San Bernardino County
Inyo County
Tulare County
Kings County
San Luis Obispo County
Santa Barbara County
Ventura County
Los Angeles
Ridgecrest
California City
Tehachapi
Arvin
Lamont
Bakersfield
Delano
McFarland
Wasco
Shafter
Taft
Maricopa
Lake Isabella
Buttonwillow
Lost Hills
Frazier Park
Mine Locations
0 5 10 20
Miles
Kern Council of Governments

Other projects on steep grades or winding mountain passes would pose the greatest potential impacts. Notwithstanding natural soil types, engineered soils can also erode because of poor construction methods and design features or lack of maintenance. Appropriate construction methods, earthwork design, and road cut design can reduce this potential impact to less than significant levels.

Mitigation Measures

- The implementing agencies will ensure that individual improvement project designs provide adequate slope drainage and appropriate landscaping to minimize the occurrence of slope instability and erosion.
- Design features will include measures to reduce erosion from storm water.
- Road cuts will be designed to maximize the potential for revegetation.
- Implementing agencies will ensure that projects avoid landslide areas and potentially unstable slopes wherever feasible.
- Where practicable, routes and individual improvement project designs that would permanently alter unique geologic features will be avoided.

Significance After Mitigation

Given the topography, ecology and meteorology of the Kern region, long-term erosion and the potential for slope-failure will remain significant.

Impact 3.7.3

Local geology can affect transportation infrastructure. Potentially significant impacts to property and public safety could occur due to subsidence and the presence of expansive soils. Mitigation measures would reduce these impacts to less than significant levels.

Subsidence has historically occurred within the Kern region because of groundwater overdraft and petroleum extraction. Unconsolidated soils containing petroleum or groundwater often compress when the liquids are removed, causing the surface elevation to decrease. Improperly abandoned oil wells or underground hard rock mining can also cause localized subsidence.

Subsidence can also occur in areas with unconsolidated soils that have not historically shown elevation changes. Transportation infrastructure designs must include appropriate reinforcement to minimize potential impacts from subsidence in areas where such activity has not been witnessed. In addition, soils with high percentages of clay can expand when wet, causing structural damage to surface improvements. These clay soils can occur in localized areas throughout the Kern region, making it necessary to survey individual improvement project areas extensively prior to construction. Each new improvement project location would have the potential to contain expansive soils, although they are more likely to be encountered in lower drainage basin areas. Expansive soils are generally removed during foundation work to avoid structural damage. Many of the improvement projects would occur within existing transportation corridors, where expansive soils may be expected to have already been removed.

Mitigation Measures

- Implementing agencies will ensure that geotechnical investigations are conducted by a qualified geologist to identify the potential for subsidence and expansive soils.

- Recommended corrective measures, such as structural reinforcement and replacing soil with engineered fill, will be implemented in individual improvement project designs.

- Implementing agencies will ensure that, prior to preparing individual improvement project designs, new and abandoned wells are identified within construction areas to ensure the stability of nearby soils.

Significance After Mitigation

Implementation and monitoring of the above mitigation measures will provide the framework and direction for subsequent project-specific mitigation designed to avoid or reduce the identified significant Project impacts to a less than significant level.

Impact: 3.7.4

Because of Kern County's moderately high level of seismic activity (reference Figures 3-7 and 3-8), construction projects may be susceptible to fault rupture and severe ground shaking. Individual improvement project susceptibility and potential damage to structures resulting from seismic action is considered a significant impact.

Mitigation Measure

- Implementing agencies shall ensure that projects are designed in accordance with county and city code requirements for seismic ground shaking. The design of projects shall consider seismicity of the site, soil response at the site, and dynamic characteristics of the structure, in compliance with the appropriate California Building Code and State of California design standards for construction in or near fault zones, as well as all standard design, grading, and construction practices in order to avoid or reduce geologic hazards.

- Implementing agencies shall ensure that projects located within or across Alquist- Priolo Zones comply with design requirements provided in Special Publication 117, published by the California Geological Survey, as well as relevant local, regional, state, and federal design criteria for construction in seismic areas.

- The project implementing agencies shall ensure that geotechnical analyses from qualified geotechnical experts are conducted within construction areas to ascertain soil types and local faulting prior to preparation of project designs. These investigations would identify areas of potential failure and recommend remedial geotechnical measures to eliminate any problems.

Significance After Mitigation

Implementation and monitoring of the above mitigation measure will provide the framework and direction for subsequent individual improvement project-specific mitigation designed to avoid or reduce the identified significant Project impacts to a less than significant level.

Impact: 3.7.5

As discussed in the Environmental Setting Section, soil types and bedrock formations within Kern County range widely in terms of their potential for geologic hazards. Although the scope of study performed for this EIR evaluation did not include a determination for project-specific liquefaction or seismic settlement potential, it is possible that liquefiable soils or soils susceptible to seismic compaction during ground shaking exist within areas of planned transportation improvement projects. This is a potentially significant impact, which will require analysis as part of subsequent project-specific environmental review.

In addition, individual improvement project construction will require removal of vegetative cover and exposure of site soils to wind and surface water runoff. High erosion rates are typical of disturbed sites. Because of the high erosion potential of some categories of soils, risk of erosion is considered a significant impact.

Implementation of the proposed Project could potentially have short-term and long-term effects on water quality downstream from specific individual improvement project sites. The short-term impacts relate to the grading and construction phases of individual improvement projects that may cause erosion, while the long-term impacts may result from increased runoff flows from larger areas of asphalt.

Mitigation Measures

- Improvement projects with significant cuts or fill will include a geotechnical investigation to identify adverse soil conditions and develop recommendations for design and construction that would limit the effects of adverse soil and bedrock conditions.

- Cut and fill plans will be prepared for all improvement projects where cut and fill will be reburied, so that all fill materials are properly designed, placed, and compacted.

- Preparation of a detailed erosion control plan will be prepared to limit the effects of soil erosion and water degradation during improvement project construction, in accordance with permit conditions and requirements of the State Water Resources Control Board's Best Management Practices (BMPs), or equally effective measures will be employed.

Significance After Mitigation

Given the topography, ecology and meteorology of the Kern region, long-term erosion and impacts on water quality will remain significant.

Impact: 3.7.6

Some street and highway projects may be proposed along alignments that will affect State-owned and State mineral-reserved lands.

Mitigation Measure

- Where possible, improvement projects will be designed by responsible agencies to limit potential impacts on State-owned or State mineral-reserved lands.

Significance After Mitigation

Given the extent of State-owned or State mineral-reserved lands in the Kern region, impacts associated with the Project will remain significant.

Cumulative Impact 3.7.7

Growth and development in Kern County would increase substantially by 2035. The 2011 RTP, by increasing mobility and including transportation measures, influences the pattern of this urbanization. Implementation of the 2011 RTP would have the potential to result in a cumulatively considerable adverse effect on human beings and property when considered at the regional scale.

Potentially hazardous geological and seismic factors are found throughout the San Joaquin Valley. Given the regional scale and growth-inducing nature of the projects and programs included in the 2011 RTP, the cumulative impacts of the 2011 RTP on geological units and soils as well as the potential exposure to substantial adverse effects to people and property would be significant.

Mitigation Measures

Mitigation measures 3.7.1 through 3.7.6 would be applied to this impact in addition to the following measure:

- Future impacts to geologic resources shall be minimized through cooperation and information sharing between the implementation agency and affected resource agencies.

Significance After Mitigation

The impacts to geologic resources due to regional scale growth would be reduced through application of the mitigation measures, however implementation of the 2011 RTP's transportation improvement projects to accommodate growth and development in Kern County (as reflected in adopted local agency general plans) would contribute to geologic resource impacts. Impacts to geologic resources from the 2011 RTP would be cumulatively considerable.

3.8 HAZARDOUS MATERIALS

Hazardous waste is defined by Section 25117 of Division 20 of the Health and Safety Code as:

A waste or combination of wastes, which because of its quantity, concentration, physical, chemical, or infectious characteristics, may:

- *Cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible illness; or*
- *Pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of, or otherwise managed.*

Regulatory Setting

Governments serve to minimize the potential impacts associated with the use and handling of hazardous materials. The most relevant federal, state, and local hazardous materials laws and regulations are summarized in this section.

Federal Agencies and Regulations

- United States Environmental Protection Agency (EPA)

  EPA works to develop and enforce regulations that implement environmental laws enacted by Congress. The EPA is the primary federal agency charged with protecting human health and with safeguarding the natural environment: air, water, and land. EPA is responsible for researching and setting national standards for a variety of environmental programs, and delegates to states and tribes the responsibility for issuing permits and for monitoring and enforcing compliance. Since 1970, the EPA has enacted numerous environmental laws including the Resource Conservation and Recovery Act (RCRA); the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA); and the Toxic Substances Control Act (TSCA).

- Resource Conservation and Recovery Act (RCRA)

  The principle federal law that regulates generation, management, and transportation of waste is referred to as the 1976 Resource Conservation and Recovery Act (RCRA). RCRA gave the EPA authority to develop strict requirements for all aspects of hazardous waste management including the treatment, storage, and disposal of hazardous waste. In addition, RCRA requires the inspection, enforcement, and formal corrective action for facilities that do not live up to the terms of their permits and other requirements. To achieve these goals, RCRA established three programs:

  - Subtitle D (Solid Waste Program): Encourages states to develop comprehensive plans to manage non-hazardous industrial solid waste and municipal solid waste, sets criteria for municipal solid waste landfills and other solid waste disposal facilities, and prohibits the open dumping of solid waste;
  - Subtitle C (Hazardous Waste Program): Establishes a system for controlling hazardous waste from the time it is generated until its ultimate disposal ("cradle to grave"); and
  - Subtitle I (UST Program): The underground storage tank (UST) program regulates the design and operation of underground storage tanks containing hazardous substances and petroleum products.

  RCRA focuses on the management of waste “from cradle to grave,” in other words, from generation, to transportation, treatment, storage, and ultimately, disposal. To assure this, the RCRA utilizes a manifest system, which is a data sheet that identifies each waste shipment. Identification from generators and transporters, and

permits for Toxic Substance Disposal Facilities (TSDFs) is required, enabling waste shipments, such as special hazardous waste, to be tracked. The manifest will accompany the waste from the generating facility to the final disposal site, thus, allowing for "cradle to grave" tracking of the waste.

- Hazardous Materials Transportation Act

  The U.S. Department of Transportation (DOT) regulates hazardous materials shipping at the federal level (49 CFR Parts 171-180). Congress passed the Hazardous Materials Transportation Act in 1975 to give authority to the Secretary of Transportation "to provide adequate protection against the risks to life and property inherent in transporting hazardous materials in commerce."

- Research and Special Programs Administration (RSPA)

  RSPA regulations cover definition and classification of hazardous materials, communication of hazards to workers and the public, packaging and labeling requirements, operational rules for shippers, and training. They apply to interstate, intrastate, and foreign commerce by air, rail, ships, and motor vehicles, and also cover hazardous waste shipments. The Federal Highway Administration (FHWA) is responsible for highway routing of hazardous materials and highway safety permits. The U.S. Coast Guard regulates bulk transport by vessel. The hazardous material regulations include emergency response provisions, including incident reporting requirements. Reports of major incidents go to the National Response Center, which in turn is linked with CHEMTREC, a service of the chemical manufacturing industry that provides details on most chemicals shipped in the U.S.

- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

  Congress enacted the CERCLA (generally referred to as Superfund) on December 11, 1980. CERCLA established a trust fund to provide for toxic waste cleanup when no responsible party could be identified. Additionally, this Act gave EPA power to seek out those parties responsible for any release and assure their cooperation in the cleanup. The law authorizes two kinds of response actions:

  - Short-term Removals: Actions are taken to address releases or threatened releases requiring prompt response; and
  - Long-term Remedial Response: Actions are taken to permanently and significantly reduce the dangers associated with releases or threats of releases of hazardous substances that are serious, but not immediately life threatening.

  Such actions can be conducted only at sites listed on EPA's National Priorities List (NPL). CERCLA also enabled the revision of the National Contingency Plan (NCP). The NCP provided the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, or contaminants. The NCP also established the NPL sites, which is the list of hazardous waste sites eligible for long-term remedial action financed under the federal Superfund program. CERCLA was amended by the Superfund Amendments and Reauthorization Act (SARA) on October 17, 1986.

- Superfund Amendments and Reauthorization Act (SARA)

  The SARA of 1986 reauthorized CERCLA to continue cleanup activities around the country. Several site-specific amendments, definitions clarifications, and technical requirements were added to the legislation, including additional enforcement authorities.

- Emergency and Community Right to Know Act (EPCRA)

  EPCRA was enacted by Congress as the national legislation on community safety. This law was designated to help local communities protect public health, safety, and the environment from chemical hazards. EPCRA was passed in response to concerns regarding the environmental and safety hazards posed by the storage and handling of toxic chemicals. EPCRA establishes requirements for federal, state and local governments, tribes and industry regarding emergency planning and "Community Right-to-Know" reporting on hazardous and toxic chemicals. The Community Right-to-Know provisions help increase the public's knowledge and access to information on chemicals at individual facilities, their uses, and releases into the environment. States and communities, working with facilities, can use the information to improve chemical safety and protect public health and the environment. To implement EPCRA, Congress required each state to appoint a State Emergency Response Commission (SERC). The SERC's were required to divide their states into Emergency Planning Districts and to name a Local Emergency Planning Committee for each district.

- Toxic Substances Control Act (TSCA)

  Congress enacted the Toxic Substances Control Act (TSCA) of 1976 to give EPA the ability to track the 75,000 industrial chemicals currently produced or imported into the United States. EPA repeatedly screens these chemicals and can require reporting or testing of those that may pose an environmental or human-health hazard. EPA can ban the manufacture and import of those chemicals that pose an unreasonable risk.

- State Agencies and Regulations

  Cleanup, or remediation, of environmentally contaminated properties is regulated by several agencies in California, depending on the size and nature of the site, its past uses, and whether soil or groundwater are impacted.

- California Environmental Protection Agency (Cal/EPA)

  Six agencies (Air Resources Board, Department of Pesticide Regulation, Department of Toxic Substances Control, Integrated Waste Management Board, Office of Environmental Health Hazard Assessment and the State Water Resources Control Board) were placed within the Cal/EPA "umbrella" to create a cabinet level voice for the protection of human health and the environment and to assure the coordinated deployment of state resources.

- California Department of Toxic Substances Control (DTSC)

  The DTSC regulates hazardous waste in California primarily under the authority of RCRA and the California Health and Safety Code. The DTSC regulates hazardous waste, cleans up existing contamination and researches ways to reduce the hazardous waste produced in California. In addition, the DTSC develops legislation, coordinates with lawmakers and responds to constituent complaints. The regulations spell out what those who handle hazardous waste must do to comply with the laws.

  The DTSC cleans-up or oversees approximately 220 hazardous substance release sites at any given time and completes an average of 125 cleanups each year. Ensuring compliance through inspection and enforcement is an important part of effectively regulating hazardous waste. DTSC conducts roughly 200 inspections a year. DTSC's Criminal Investigations Branch has the only law enforcement officers in the Cal/EPA. These peace officers, with the powers of arrest, and search and seizure, investigate alleged criminal violations of the Hazardous Waste Control Law. They work closely with district attorneys' offices, the federal Environmental Protection Agency, the Federal Bureau of Investigation, and law enforcement personnel in other states.

The California Hazardous Materials Release Response Plans and Inventory Law of 1985 (Business Plan Act) requires that any business that handles hazardous materials prepare a business plan, which must include the following:

- Details, including floor plans, of the facility and business conducted at the site;
- An inventory of hazardous materials that are handled or stored on site;
- An emergency response plan; and
- A safety and emergency response training program for new employees with annual refresher courses.

- Hazardous Transportation Materials Regulations

Transportation and use of hazardous materials are the concern of several state and local agencies, including Caltrans, which tracks hazardous materials spills at the District level; the California Highway Patrol (CHP), whose Commercial Vehicle Section includes a Motor Carrier/Licensing & HazMat Regulations Unit; and the state Office of Emergency Services, which responds to hazardous materials emergencies in cooperation with local responders. In addition, state law has established Certified Uniform Program Agencies (CUPA), often housed within local fire departments, to oversee local hazardous materials storage, usage, and disposal.

- California Unified Program Agency (CUPA)

In 1993, the CUPA was created by SB 1082 in order to simplify the process of regulating and managing hazardous materials and hazardous wastes. Rather than having numerous state and local agencies regulating a single business, SB 1082 consolidated the enforcement of several different environmental regulations under the administration of one local agency called a CUPA. The CUPA can be a county, city or JPA (Joint Powers Authority). Under SB 1082, the state required all counties to apply for status as a CUPA. In order to address the needs of cities, some of which already had strong environmental inspection programs in place, the law allowed cities to opt in to the CUPA program as long as they could show that they had the minimum expertise and training to implement the six program elements. Each CUPA, whether housed in a Fire Department, Environmental Health Department, or some other department within the city or county would consolidate six existing environmental regulation programs with the goal of reducing: 1) the number of regular inspections to each site by combining different inspections into a single visit, and 2) the amount each regulated business paid in inspection fees. The six programs include the following: 1) Hazardous Materials Business Plan/Emergency Response Plan; 2) Hazardous Waste/Tiered Permitting; 3) Underground Storage Tanks; 4) Aboveground Storage Tanks (SPCC only); 5) California Accidental Release Program; and 6) the Uniform Fire Code Hazardous Materials Management Plan. The CUPA designates a Participating Agency (PA) to administer one or more Unified Programs within their jurisdiction on behalf of the CUPA.

Environmental Setting

As in many parts of California, the individual cities and Kern County have prepared an Integrated Hazardous Waste Management Plan. It is the responsibility of each jurisdiction, under the provisions of the hazardous waste management plan, to enforce planning decisions or designations regarding the transport and treatment of hazardous waste and the siting of hazardous waste treatment facilities.

Hazardous Waste Management and Transportation

Waste management generally falls into four categories: source reduction, recycling, treatment, and residuals disposal. Waste management locations typically accommodate all of these types of activities onsite. Recycling, treatment, and disposal can also occur off-site. However, they would require additional intermediate support not only to store but also to transport the waste.

Public exposure to hazardous materials is elevated, because these materials are transported primarily on highways and local roads. This fact causes the national and local governments to be concerned about the safe transport of hazardous materials and the potential harm that hazardous waste can cause to people and the environment.

Local governments can regulate hazardous material and waste transport in one of two ways. First, they may prohibit or limit hazardous material and waste transport. Local governments are generally not responsible for regulating hazardous waste transport on state and interstate highways; however, they are explicitly given the responsibility for regulating hazardous waste transport on local streets. Under AB 1861 (Campbell 1985), local governments can regulate hazardous material and waste transport on local roads considering the following guidelines:

- The road is appreciably less safe than reasonable alternatives as determined using the Federal Highway Administration's "Guidelines for Applying Criteria to Designate Routes for Transporting Hazardous Materials";
- The local regulation is not preempted by federal law;
- The local regulation does not limit necessary access to businesses requiring the services of hazardous materials transporters;
- The local regulation allows hazardous materials transporters access to service facilities that are within one-half mile of a state or interstate highway;
- Neighboring jurisdictions agree that the regulation is not incompatible with through transportation;
- The regulated road is posted; and
- The California Highway Patrol (CHP) is notified of the regulations and includes the restricted road in their published list of restricted highways.

The CHP supports the local governments' responsibility for regulating hazardous materials transport on local roads. As such, the CHP has issued regulations to trucking companies and drivers who carry explosives requiring drivers to follow routes that have been prescribed or established by local authorities. Further, the CHP requires that:

> *Where routes are not prescribed by local authority, every driver of a vehicle transporting explosives will avoid so far as practicable, and, where feasible, by prearrangement of routes, driving into or through congested thoroughfares, places where crowds are assembled, streetcar tracks, tunnels, viaducts, and dangerous crossings.*

The second way that local governments can regulate transportation is to conduct a transportation risk analysis to determine hazardous waste facility siting. The Integrated Waste Management Plan identifies the adopted commercial hazardous materials shipping routes within Kern County. For the Kern County system of routes, a number of State Routes (SR) and US highways are designated in the Integrated Plan.

Although local laws may exist to regulate various aspects of hazardous waste transportation on city and county roads, movement usually involves long-distance travel on state and interstate highways.

Response Procedures for Hazardous Materials Spills

Emergency response programs will address either of the following two scenarios:

- Responding to a release of hazardous materials into the environment; and/or
- Implementing AB2185, AB2187, and AB3777 and local emergency response/disclosure ordinances.

Hazardous material releases, typically spills or gas vapor releases, pose potentially serious health threats, and as such, require special attention. Specially trained and equipped crews are assigned to respond to these situations to handle the unique problems presented by hazardous materials.

State-mandated disclosure and emergency response programs require local users of hazardous materials to submit emergency response plans and hazardous material inventory lists to a local agency. The local agency is responsible for developing an emergency response plan for the area.

Methodology

The impact assessment for hazardous materials transport focuses on potential effects the RTP might have on hazardous material use and transport within the County. The assessment is not site or individual improvement project specific but is a regional analysis.

Environmental Impacts, Mitigation Measures, and Significance After Mitigation

Criteria for Significance

The Project could create a potential significant impact if the following conditions are present:

- Hazardous waste is generated from construction and maintenance of transportation facilities that cannot be recycled or reused; and/or
- Potential safety risks exist with the transport of hazardous materials.

Impact 3.8.1 - Transport, use, or disposal of hazardous materials Impacts

The proposed RTP includes projects that may involve the transportation, use, and/or disposal of hazardous materials, particularly the proposed freight rail improvements and other goods movement capacity enhancements, which may result in transport of hazardous goods as well as the use of equipment that contains or uses routine hazardous materials (e.g., diesel fueled equipment), or the transportation of excavated soil and/or groundwater containing contaminants from areas that are identified as being contaminated.

It is anticipated that these activities would result in a less than significant hazard to the public and/or the environment, because these activities are subject to numerous laws, regulations, and health and safety standards set forth by federal, state, and local authorities that regulate the proper handling of such materials and their containers. These include the EPA, the Occupational Safety and Health Administration (OSHA), USDOT, and the Food and Drug Administration (FDA) for the federal government. State agencies, including the Health and Welfare Agency (HWA), under which is the DTSC, have parallel, and in some cases more stringent, rules governing the use of hazardous materials.

USDOT requires the use of hazardous waste manifests which are used to ensure that hazardous wastes are strictly monitored and tracked from the point of generation through ultimate disposal. To operate in California, all hazardous

waste transporters must be registered with the DTSC. Unless specifically exempted, hazardous waste transporters must comply with the California Highway Patrol Regulations; the California State Fire Marshal Regulations; and the United States Department of Transportation Regulations.

In addition, the construction and maintenance of transportation facilities included in the 2011 RTP would involve the use of hazardous materials such as solvents, paints and other architectural coatings. The use and storage of these materials will be regulated by local fire departments, CUPAs, and the California Division of Occupational Safety and Health. Materials left over from construction projects can likely be re-used on other projects. For materials that cannot be or are not reused, disposal would be regulated by the DTSC under state and federal hazardous waste regulations.

Due to the strict and numerous regulations governing the use of hazardous materials, impacts are expected to be less than significant.

The following mitigation measure is included to ensure compliance with applicable regulations.

Mitigation Measures

- The implementation agency shall comply with all applicable laws, regulations, and health and safety standards set forth by federal, state, and local authorities that regulate the proper handling of such materials and their containers to the routine transport, use, and disposal of hazardous materials does not create a significant hazard to the public or the environment.

Significance After Mitigation

The mitigation measure would assure appropriate steps taken to minimize any hazard to the public or the environment. The impact after mitigation would be less than significant.

Impact 3.8.2 - Release of Hazardous Materials

The implementation of the 2011 RTP could create a hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment during transportation. Implementation of the 2011 RTP would facilitate the movement of goods, including hazardous materials, through the region. Transportation of goods, in general, and hazardous materials in particular, can thus be expected to increase substantially with implementation of the 2011 RTP.

Given the large volume of materials currently and projected to be transported through the region, some portion of which is and will continue to be, hazardous, the risk of upset as a result of accident or human interference is significant.

Mitigation Measures

- Implementing agencies shall encourage the USDOT, the Office of Emergency Services, and Caltrans to continue to conduct driver safety training programs and encourage the private sector to continue conducting driver safety training.

- Implementing agencies shall encourage the USDOT and the CHP to continue to enforce speed limits and existing regulations governing goods movement and hazardous materials transportation.

Significance After Mitigation

The improvements to the regional transportation system by 2035 would facilitate a substantial increase in the transportation of all goods, including hazardous materials. However, even with the above mitigation, this impact would remain significant.

Impact 3.8.3

The implementation of the 2011 RTP could create a hazard to the public or the environment through the disturbance of contaminated property during the construction of new transportation or expansion of existing transportation facilities.

Construction of the projects in the 2011 RTP could involve construction through or next to sites that are contaminated due to past use or disposal of hazardous materials. In the two decades since federal and state laws were adopted providing for remediation of these sites, it is likely that the majority of contaminated sites have been identified or are easily identifiable from existing information. Given the intensity of past use of land in the region there are substantial numbers of contaminated sites, and it is likely that most RTP projects will have to address this issue.

Because of the large number of contaminated sites and the risk associated with encountering and cleaning up these sites, this impact is considered to be significant.

Mitigation Measures

- Prior to approval of any RTP project, the project implementation agency shall consult all known databases of contaminated sites and undertake a standard Phase 1 Environmental Site Assessment in the process of planning, environmental clearance, and construction for projects included in the 2011 RTP. If contamination is found the implementing agency shall coordinate clean up and/or maintenance activities.

- Where contaminated sites are identified, the project implementation agency shall develop appropriate mitigation measures to assure that worker and public exposure is minimized to an acceptable level and to prevent any further environmental contamination as a result of construction.

- Local agencies should contact the Chevron Environmental Management Company (CEMC) to determine whether an improvement project may be in the vicinity of the Tidewater Oil Company or Standard Oil Company historical pipeline alignments. A map of the alignments is provided in Appendix B of this SEIR.

Significance After Mitigation

The mitigation measure would assure that contaminated properties are identified and appropriate steps taken to minimize human exposure and prevent any further environmental contamination. The impact after mitigation would be less than significant.

Cumulative Impact 3.8.4

Implementation of the investments and policies in the 2011 RTP could create a potential hazard to the public or the environment by the disturbance of contaminated sites as a result of population and housing growth in the region.

The 2011 RTP's influence on mobility and its transportation measures would influence population distribution, potentially contributing to a cumulatively considerable impact related to disturbance of contaminated sites by new

urban development. With additional pressure for infill development, reuse of "brownfields" properties may become more common as the region grows.

This impact is considered to be significant.

Mitigation Measure

Mitigation Measures 3.8.1 through 3.8.3 as implemented by responsible agencies and private developers would address this impact.

Significance After Mitigation

With appropriate review and clean up or maintenance, this impact would not be cumulatively considerable and therefore would be less than significant.

3.9 HYDROLOGY & WATER QUALITY

Issues related to surface water resources, flooding, groundwater resources, storm water runoff, and water quality are addressed in this section. Further discussion of water supply can be found in the Public Utilities, Other Utilities and Services Systems section.

Regulatory

Water resources in the Kern region are regulated at the federal, state, and local levels as follows:

Federal Regulations

- Clean Water Act (CWA) - Enacted by Congress in 1972, the Clean Water Act mandates cooperative efforts by federal, state, and local governments to implement its pollution control measures. This law was the first comprehensive national clean water legislation to protect the nation's waters.

  The National Pollutant Discharge Elimination System (NPDES) was established by the Clean Water Act to regulate discharges into "navigable waters" of the United States. This is accomplished by using pollutant thresholds and operational conditions for industrial facilities and wastewater treatment plants. The Act also established Storm Water Management Plans, municipal authority for non-point source NPDES permits, in communities with populations greater than 100,000 to control urban storm water runoff.

  These plans ensure best management practices to reduce pollutant loads. Water quality thresholds called Total Maximum Daily Loads were also developed for pollutants and other stressors affecting water quality. Finally, in an effort to ensure that the actions will be consistent with the state's water quality requirements, Section 401 of the Clean Water Act grants states the authority to review federal permits or licenses that will result in a discharge or disruption to wetlands and other waters under state jurisdiction.

- Safe Drinking Water Act

  The Safe Drinking Water Act (SDWA) ensures the quality of Americans' drinking water. The law requires actions to protect drinking water and its sources—rivers, lakes, reservoirs, springs and groundwater wells—and applies to public water systems serving 25 or more people. It authorizes the EPA to set national health-based standards for drinking water to protect against both naturally occurring and man-made contaminants. In addition, it oversees the states, municipalities and water suppliers that implement the standards.

  EPA standards are developed as a Maximum Contaminant Level (MCL) for each chemical or microbe. The MCL is the concentration that is not anticipated to produce adverse health effects after a lifetime of exposure, based upon toxicity data and risk assessment principles. EPA's goal in setting MCLs is to assure that even small violations for a period of time do not pose significant risk to the public's health over the long run. National Primary Drinking Water Regulations (NPDWRs or primary standards) are legally enforceable standards that limit the levels of contaminants in drinking water supplied by public water systems.

  Secondary standards are non-enforceable guidelines regulating contaminants that may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water. EPA recommends secondary standards to water systems but does not require systems to comply. However, states may choose to adopt them as enforceable standards

Federal Agencies

- U.S. Army Corps of Engineers - The Corps of Engineers regulates placement of dredged or fill material in waters of the United States, and regulates work in its navigable waters.

- U.S. Environmental Protection Agency (EPA) - The U.S. Environmental Protection Agency is the federal agency responsible for water quality management and administration of the federal Clean Water Act (CWA). In California, the EPA has delegated most of the administration of the CWA to the State Water Resources Control Board (SWRCB).

- U.S. Fish and Wildlife Service (USFWS) - The U. S. Fish and Wildlife Service (USFWS) administers the Federal Endangered Species Act (FESA) and designates critical habitat for endangered species to carry out its mission to conserve, protect, and enhance the nation's fish and wildlife and their habitats for the continuing benefit of people. Critical habitat areas cannot be disturbed without permission from the USFWS or other federal agencies, depending on land ownership. The USFWS also manages a system of land and waters for the conservation of wildlife and associated ecosystems. These National Wildlife Refuges are primarily managed for the preservation and protection of unique or important resources and ecosystems.

- The Federal Emergency Management Agency (FEMA)

  The U.S. Congress passed the National Flood Insurance Act in 1968 and the Flood Disaster Protection Act in 1973 in order to restrict certain types of development on floodplains and provide for a national flood insurance program. The purpose of these programs is to reduce the need for large publicly funded flood control structures and disaster relief.

  FEMA classifies flood hazard zones as follows:

  - Zone A – Areas of 100 year flood. Base flood elevations and flood hazard factors are not determined.
  - Zone B – Areas between the limits of the 100-year flood and 500 year flood; or certain areas subject to the 100 year flooding with average depth of less than one foot; or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood.
  - Zone C – Areas of minimal flooding not requiring flood insurance.

- The U.S. Bureau of Reclamation (USBR)

  The USBR serves as Watermaster overseeing contentious water rights issues, and runs drought protection programs.

State Agencies

- California State Water Resource Control Board (SWRCB)

  The SWRCB was established through the California Porter Cologne Water Quality Act of 1969. It is the primary State agency responsible for water quality management issues.

- Regional Water Quality Control Board (RWQCB) – Central Valley Region

  The Regional Water Quality Control Board is responsible for implementing policies of the SWRCB, such as ensuring compliance with discharge thresholds and operating standards. Kern County is located within the RWQCB's Central Valley Region.

- California Department of Fish and Game (CDFG)

  The mandate of the California Department of Fish and Game is to manage California's diverse fish, wildlife, and plant resources, and the habitats upon which they depend, for their ecological values and for public use and enjoyment. In particular, CDFG is required under the California Endangered Species Act, the California Native Plant Protection Act, the California Environmental Quality Act and the Natural Community Conservation Planning Act to conserve species through listing, habitat acquisition and protection, review of local land use planning, multi-species conservation planning, stewardship, recovery, research, and education. The CDFG protects rare, threatened and endangered species by managing habitat in legally designated ecological reserves or wildlife areas.

- Delta Water Agency

  The Delta Agency was established in 1965 to maintain agricultural water quality throughout the Delta. In 1973, the agency was replaced by three distinctive agencies: North, Central, and South Delta Water Agencies.

- Delta Protection Commission

  The Delta Protection Commission was established by the Delta Protection Act of 1992 to develop a long-term resource management plan for the Delta Primary Zone. The goals of this plan are to protect, maintain and, where possible, enhance and restore the overall quality of the Delta environment, including but not limited to, agriculture, wildlife habitat, and recreational activities.

- The Department of Water Resources (DWR)

  The DWR is responsible for the planning, construction and operation of State Water Project (SWP) facilities, including the California Aqueduct, and sets conditions on use of SWP facilities. In addition, DWR is responsible for statewide water planning, evaluating urban water management plans, overseeing dam safety and flood control, and transfer of certain water rights permits (e.g., pre-1914).

- The California Department of Public Health33 (DPH)

  DPH implements the SDWA. In addition, it oversees the operational permitting and regulatory oversight of public water systems. DPH requires public water systems to perform routine monitoring for regulated contaminants that may be present in their drinking water supply. To meet water quality standards and comply with regulations, a water system with a contaminant exceeding an MCL must notify the public and remove the source from service or initiate a process and schedule to install treatment for removing the contaminant. Health violations occur when the contaminant amount exceeds the safety standard (MCL) or when water is not treated properly. In California, compliance is usually determined at the wellhead or the surface water intake. Monitoring violations involve failure to conduct or to report in a timely fashion the results of required monitoring.

  In addition, DPH conducts water source assessments, oversees water recycling projects, permits water treatment devices, certifies water system employees, promotes water system security, and administers grants under the State Revolving Fund and State bonds for water system improvements.

- The California Department of Toxic Substances Control (DTSC)

  DTSC is responsible for oversight of hazardous substances and remediation of contaminated sites, including in some cases water sources.

- Porter Cologne Water Quality Control Act

  The Porter Cologne Water Quality Control Act of 1967 (Water Code Section 13000 et seq.) requires the SWRCB and the nine RWQCBs to adopt water quality criteria to protect State waters. These criteria include the identification of beneficial uses, narrative to the applicable and numerical water quality standards, and implementation procedures.

  The Porter-Cologne Water Quality Control Act authorizes the state boards to adopt, review and revise policies for all waters of the state (including both surface and ground waters) and directs the regional boards to develop Basin Plans. The act also authorizes state boards to adopt Water Quality Control Plans. In the event of inconsistencies among state and regional board plans, the more stringent provisions apply.

Environmental Setting

Hydrology

- Navigable Surface Waters

  The Kern River is the only navigable river for recreation purposes in Kern County. The Kern region has no waterways navigable by commercial vessels.

- Flooding

  Kern County has been historically vulnerable to flooding because of the network of streams that run through the valley and the adjacent low-lying terrain. Much of the Kern basin lies within the natural floodplain of the Kern River. Many low-lying areas near the Kern River are located in the 100-year floodplain. Principal impacts of flooding include damage to permanent structures, relocation of non-stationary objects, loss of human life and damage to infrastructure and soil conditions. After the initial damage from floodwaters, standing water often creates a secondary level of destruction, by ruining crops, further undermining and damaging infrastructure, and contaminating water wells.

  Flooding occurs occasionally on streets and roads in urbanized areas where storm waters are diverted into man-made or artificial drainage systems. Storm water is not able to permeate and percolate into the soil, and is, therefore, diverted into a storm drainage system, in urbanized areas with significant surface areas covered with impervious surfaces. In some areas, these drainage systems are occasionally overloaded with storm water drainage, or the drains become clogged with leaves and other debris, thereby impeding storm water drainage onto transportation facilities. The ability of the storm drainage system to accommodate water flows is also largely based on ground permeability and infrastructure capacity. In metropolitan areas, agencies responsible for maintaining and upgrading drainage facilities to accommodate volume are local cities and the county.

  Flooding occurs generally when soil and vegetation cannot absorb excess moisture, and water runs off the land in quantities that cannot be carried in stream channels or kept in natural ponds or man-made reservoirs. Periodic floods occur naturally on many rivers, forming an area known as the floodplain. These river floods usually result from heavy rain, sometimes combined with melting snow, which causes the rivers to overflow their

banks. A flood that rises and falls rapidly with little or no advance warning is called a flash flood. Flash floods usually result from intense rainfall over a relatively small area.

Sources of floods in Kern County's valley and desert regions originate from small streams or rivers that shift across alluvial fans. Floods in the mountain regions are typically confined to narrow valleys, where flood flows from streams or rivers peak quickly with high velocity.

Since 1971, the U.S. Department of Housing and Urban Development (HUD) designated the unincorporated portions of Kern County as special flood hazard areas. In compliance with the Federal Flood Insurance Program, HUD provided Kern County with a series of 83 Flood Hazard Boundary Maps. All but six of these maps apply to unincorporated areas. The maps, which delineate major areas of flooding throughout the County, are on file in the offices of the Kern County Engineering & Survey Services Department/Floodplain Management Section, and are hereby incorporated by reference.

Based on historical data, Kern County has a 22.4 percent chance of experiencing a flood in any given year. The majority of floods in Kern County have occurred from winter-spring rainfall, but several have been the result of intensive cloudbursts in the months of July, August and September. Floods have potential to do widespread economic damage to agriculture in Kern County and impact homes and businesses, as well as inundate or destroy roads and public facilities.

- Groundwater Resources

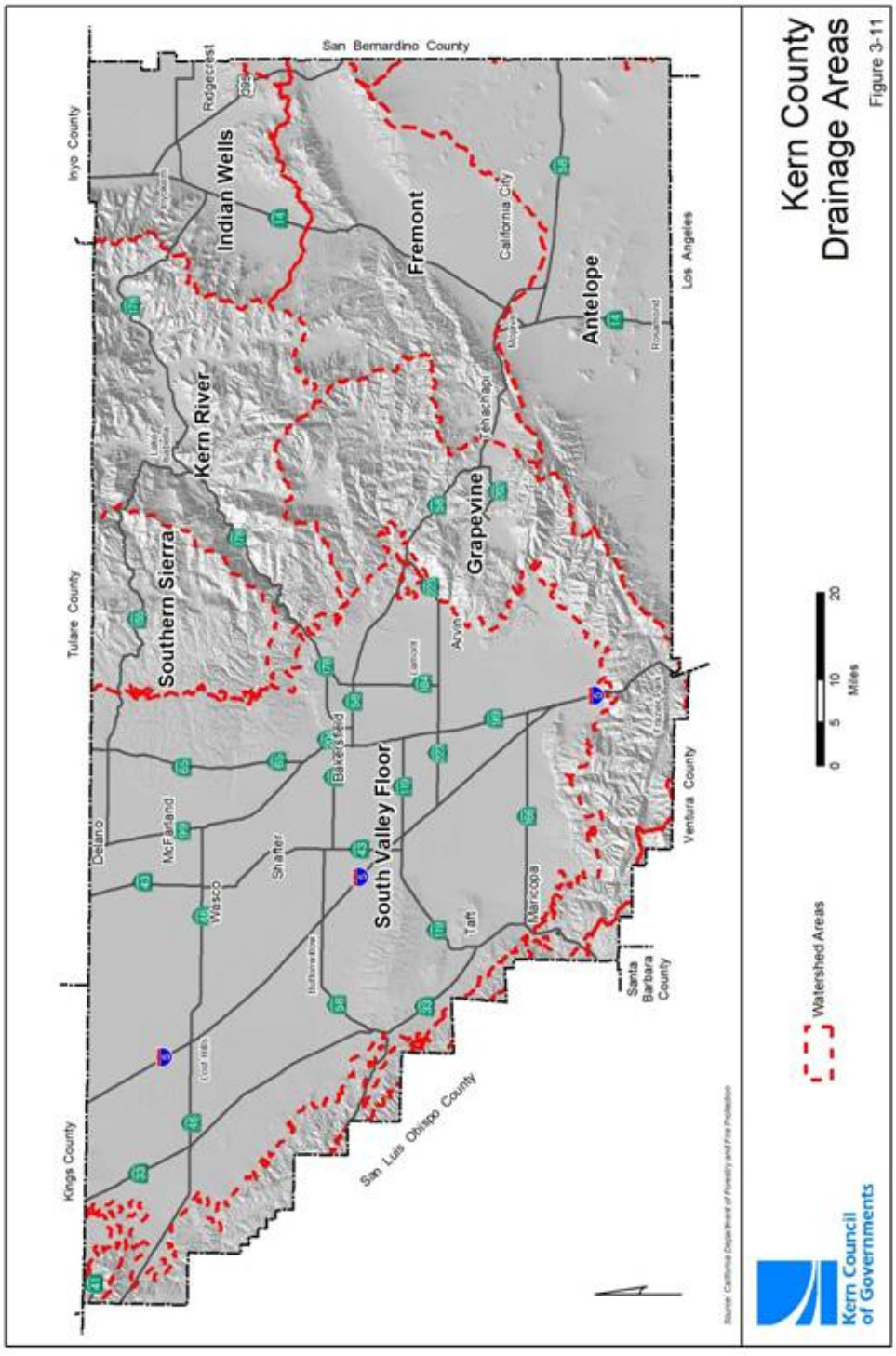
Because of their capacity to store usable water in a manner that is perennially secure from loss or evaporation, groundwater reservoirs are a significant water resource. Most groundwater reservoirs store far more water than the volume that flows through them annually. However, only the flow-through volume is renewable. A groundwater resource can contain several aquifers, or water-bearing zones. An aquifer refers to a rock formation that is water bearing.

Infiltration of rainfall, seepage from streams, canals, ditches, and underflow that enters the valley from tributary stream canyons recharges groundwater reservoirs. Significant areas of groundwater recharge are located along the stream channels of the rivers, where porous soils and gravels contribute extensive amounts of aquifer recharge. Other areas away from river flood plains are characterized by semi-consolidated gravels with low recharge capability or, more often, clay or hardpan soils, which allow minimal groundwater recharge.

- Drainage Patterns

Kern County encompasses portions of two major California drainage systems: the San Joaquin Valley basin and the Mojave Desert basin (Figure 3-11). The western two-thirds of the County drains into the San Joaquin Valley, while the remainder of the County drains into the Mojave Desert basin, which consists of three smaller valleys.

The San Joaquin Valley basin has two primary floodwater collection basins in Kern County: Lake Isabella and Buena Vista Lake. Lake Isabella is located approximately 34 miles northeast of Bakersfield within the Sierra Nevada foothills. Isabella Dam controls the flow of the Kern River's lower portion resulting in the creation of Lake Isabella. With a storage capacity of 550,000 acre-feet, Lake Isabella is the County's largest reservoir.


Kern County
Drainage Areas
Figure 3-11
San Bernardino County
Inyo County
Tulare County
Kings County
Los Angeles
Ventura County
Santa Barbara County
San Luis Obispo County
Indian Wells
Fremont
Antelope
Kern River
Southern Sierra
Grapevine
South Valley Floor
Ridgecrest
California City
Tehachapi
Arvin
Lamont
Bakersfield
Delano
McFarland
Wasco
Shafter
Taft
Maricopa
Lost Hills
Watershed Areas
0 5 10 20
Miles
Kern Council of Governments

San Joaquin Valley's second collection basin in Kern County is Buena Vista Lake located southwest of Bakersfield. The lake's capacity is 205,000 acre-feet, but is currently used only during periods of exceptionally high run-off.

The Mojave Desert drainage system consists of three separate watershed areas. The most northern of these areas is the Indian Wells Valley located in the County's northeastern portion. The China Lake collection basin is the primary collection point for this valley. The Fremont Valley is located south of Indian Wells and the Koehn Lake is its primary collection basin. Lastly, the Antelope Valley watershed is located in Kern County's southeastern portion. The two primary floodwater collection basins within this valley are Rosamond Lake and Rogers Lake.

- Navigable Surface Waters

The Kern River is the only navigable river for recreation purposes in Kern County. The Kern region has no waterways navigable by commercial vessels.

Water Quality

- Surface Water Resource Quality and Supply

Kern County is located in the state's Regional Water Quality Control system and is marked by an abundance of surface water resources including lakes, rivers, and streams, as well as numerous creeks and canals, such as the Friant-Kern Canal. A number of wetland and vernal pool areas also exist.

Vernal pools represent an important surface water feature. These pools collect seasonal rains that typically provide habitat for plants and animals, often rare or endangered species. These water bodies are small, and are usually underlain by semi-impermeable soils that restrict percolation into the water table below, resulting in pools that can last from winter to summer. California has lost a greater proportion of its original wetlands than has any other state. As such, wetlands protection is a challenge here as it is in the rest of the country. The regulation of wetlands falls mainly with the U.S. Army Corps of Engineers, through the authority of Section 404 of the Clean Water Act. Wetlands, as a biological resource habitat, are discussed further in the Biotics section of this report.

The Kern River is the primary natural surface water source within Kern County. The river flows generally east-west, with its origins in the Sierra Nevada mountain range. Flowing from the Sierra Nevada Mountains, the Kern River runs through Lake Isabella and eventually drains into the San Joaquin Valley and Buena Vista Lake. The river's approximate annual run-off is 760,000 acre-feet (an acre-foot is 325,851 gallons). The total Sierra Nevada area drained by the Kern River is 2,420 square miles.

Many communities within the San Joaquin Valley must supplement natural surface water with water diverted from other sources. The major sources are the State Water Project's California Aqueduct and the Central Valley Project's Friant-Kern Canal. Within Bakersfield, for example, the Kern County Water Agency decontaminates Central Valley Project Cross Valley Canal water in order to supplement its urban ground water supply. Smaller towns in the western portions of San Joaquin Valley receive imported surface water from the San Luis Canal to meet urban needs.

Water "banking" also occurs among San Joaquin Valley communities to preserve water for future use. Bakersfield and local water agencies operate a 2,800-acre recharge facility southwest of Bakersfield where surplus water from the Kern River, State Water Project and the Friant-Kern Canal is recharged for withdrawal in drier years. In addition to water diverted from the Kern and other rivers, water is also supplied to the San

Joaquin Valley from subsurface sources. The groundwater supply varies, however, depending on the particular area and season.

Kern County's eastern portion, which encompasses the Mojave Desert drainage system and its three valleys, depends heavily on groundwater as its natural water source. Unlike the western two-thirds of the County, the area east of the Sierra Nevada mountain range does not have a large natural surface water source such as the Kern River.

Two sources of imported water within the Mojave drainage system are the Los Angeles aqueducts constructed in 1913 and 1970. The aqueducts' primary purpose is to redirect water from the Mono-Owens area to the City of Los Angeles. The combined carrying capacity of both aqueducts is 780 cubic feet per second.

Nearly all the water supplied to the Antelope Valley area comes from well pumping. Because of this dependency on groundwater, serious water overdraft has occurred. The two primary groundwater basins within Antelope Valley are the Antelope Valley basin located in the west and the El Mirage basin in the east. In order to recharge the valley's groundwater basins, the Antelope Valley-East Kern Water Agency began delivering State Water Project water in the 1970's.

Although Antelope Valley generally lacks adequate ground and surface water, water quality is considered good in most areas. Within Indian Wells Valley, however, groundwater has been found to be of poor quality and located at deep levels.

- Storm Water Runoff

Storm water runoff in the urbanized portions of Kern County is diverted into storm drain systems that funnel these effluents to the network of surface waters. Drainage of surface waters is augmented by natural drainage patterns in non-urban areas. The quality of storm water runoff affects the quality of the surface water into which the runoff eventually flows. Untreated pollutants such as suspended solids, pathogens, oil, grease, air pollutants, pesticides, fertilizers, and animal wastes are carried in storm water when it passes over transportation facilities. In 1987, the federal government created the National Pollutant Discharge Elimination System (NPDES) to address this problem. The NPDES enables state water quality agencies to issue permits to cities and counties to develop, implement, and enforce runoff management programs. Therefore, local jurisdictions are responsible for regulating the harmful constituents of storm water runoff by regulating non-point source pollutants, and for developing methods for containing and treating storm water runoff.

Groundwater naturally contains pollutants, which occur when water contacts rocks and soils and carries away dissolved solids. However, human activities further impact water quality by affecting the quantity and quality of water that eventually percolates back into the soil and recharges groundwater sources. High concentrations of dissolved solids create objectionable odors, taste, and staining. The quality of groundwater is affected by three main factors in Kern County: agricultural pollution, industrial pollution, and urban pollution in the form of storm water runoff. As with surface water contamination, storm water that washes over transportation facilities carries urban pollutants. When this untreated effluent percolates into the soil, some contaminants are filtered out before reaching the groundwater aquifer. Reductions in permeable surfaces limit percolation and associated filtration that treat these contaminants.

Methodology

Regulatory information and recommended mitigation measures were obtained from state-recommended best management practices for storm water management.

Environmental Impacts, Mitigation Measures, and Significance After Mitigation

Criteria For Significance

The CEQA Guidelines establish that a significant impact would be expected to occur if the project would:

- Violate Regional Water Quality Control Board 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 (i.e., 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);
- 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 that would result in substantial erosion or situation 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 that would result in flooding on- or off-site;
- Create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems to control;
- Otherwise substantially degrade water quality; and/or
- Place within a 100-year floodplain structures that would impede or redirect flood flows.

To determine the actual potential for significant impacts on hydrology and water quality resulting from implementation of transportation improvements, individual improvement project-specific studies would be necessary. However, some general impacts can be identified based on the nature of the individual transportation improvements. Projects located in watersheds, adjacent to impaired water bodies, or in flood hazard areas are most likely to affect water resources. Construction of the proposed projects could cause water quality impacts because the individual improvement projects would increase the area of paved surface. Water quality could be affected by storm water runoff that passes over paved surfaces before it reaches a major creek, river, or water body.

Floodplains are periodically inundated during high flows of nearby streams or high water levels in ponds or lakes. Natural floodplains offer wildlife and plant habitat, open space, and groundwater recharge benefits. Individual improvement project construction could affect these uses if not mitigated.

A proposed individual improvement project would likely have a greater impact on water resources in areas where it is directly adjacent to, or crosses, a drainage facility or water body, and in areas where projects are located in 100-year flood hazard areas.

Short Term Impacts

Short-term impacts are temporary and generally related to construction activities. Construction activities undertaken to implement transportation improvements could include excavation, soil stockpiling, boring, and grading. Soil erosion is probable during construction and could directly affect the water quality of local drainage, which could potentially be directed into surface water systems. Soils can contain nitrogen and phosphorus that when carried into water bodies can trigger algal blooms.

Extensive blooms of algae can reduce water clarity, deplete oxygen concentrations, and create unpleasant odors. Excessive deposition of sediments in stream channels can blanket fauna and clog streambeds, degrading aquatic habitat. Increased turbidity from suspended sediments can also reduce photosynthesis that produces food supply and aquatic habitat. Additionally, sediment from individual improvement project induced on-site erosion could

accumulate in downstream drainage facilities and interfere with stream flow, thereby aggravating downstream flooding conditions.

Impacts from construction could affect local storm drain catch basins, culverts, flood control channels, streams, and rivers, depending on the transportation improvement project location. Most runoff in urban areas is eventually directed to either a storm drain or water body.

Long Term Impacts

Increases in the amount of regionally-generated nonpoint-source pollutants could occur. In general, they would be attributed to increases in impervious surface area associated with paving, combined with increased overall regional traffic. These nonpoint-source pollutants include oil and grease, petroleum hydrocarbons, metals and possibly nutrients. The paving required for highway projects could have minor effects on the amount of surface water that filters into the ground. Pollutants in the runoff from proposed transportation facilities could affect groundwater basins.

Impact: 3.9.1

Local surface water quality would be affected by increased urban runoff and construction runoff. Increasing impervious surface area would increase urban runoff, which transports greater quantities of contaminants to receiving waters. Construction activities can increase pollutant loads in storm water. In addition, road cut erosion can increase long-term siltation in local receiving waters.

Mitigation Measure

- Improvement projects along existing facilities will include upgrades to storm water drainage facilities to accommodate increased runoff volumes. These upgrades may include the construction of detention basins or structures that will delay peak flows and reduce velocity.

Impact: 3.9.2

The installation of transportation infrastructure and expansion of individual improvement project facilities could encounter groundwater. Individual projects may require dewatering during construction and for the life of the improvement project.

Mitigation Measures

- Transportation network improvements will comply with local, state and federal floodplain regulations. Proposed transportation improvements will be engineered by responsible agencies to accommodate storm drainage flow.

- Responsible agencies should ensure that operational best management practices for street cleaning, litter control, and catch basin cleaning are provided to prevent water quality degradation. Responsible agencies implementing projects requiring continual water removal facilities will provide monitoring systems including long-term administrative procedures to ensure proper operations for the life of the improvement project.

Impact: 3.9.3

The Project could increase flooding hazards. Installation of impervious surfaces increases storm water runoff volumes and peak flow rates. This can create flooding hazards in local receiving waters and drainage systems. In addition, placing new structures within an existing floodplain can impede floodwaters, altering the flood elevations upstream and downstream.

Mitigation Measures

- Prior to construction, and when a potential drainage issue is known, a drainage study will be conducted by responsible agencies for new capacity-increasing projects. Drainage systems will be designed to maximize the use of detention basins, vegetated areas, and velocity dissipaters to reduce peak flows where possible. Transportation improvements will comply with federal, state and local regulations regarding storm water management. State-owned freeways must comply with Storm Water Discharge NPDES permit for Caltrans facilities.

- Responsible agencies will ensure that new facilities include water quality control features such as drainage channels, detention basins, and vegetated buffers to prevent pollution of adjacent water resources by runoff.

- Letters of Map Revision (LOMR) will be prepared and submitted to FEMA (when applicable) by responsible agencies where construction would occur within 100-year floodplains. The LOMR will include revised local base flood elevations for projects constructed within flood-prone areas.

Impact: 3.9.4

Local surface water quality would be affected by increased urban runoff and construction runoff. Increasing impervious surface area would increase urban runoff, which transports greater quantities of contaminants to receiving waters. Construction activities can increase pollutant loads in storm water. In addition, road cut erosion can increase long-term siltation in local receiving waters.

Mitigation Measure

- Improvement projects along existing facilities will include upgrades to storm water drainage facilities to accommodate increased runoff volumes. These upgrades may include the construction of detention basins or structures that will delay peak flows and reduce velocity.

Significance After Mitigation

Implementation and monitoring of the above mitigation measures will provide the framework and direction for subsequent project-specific mitigation designed to avoid or reduce the identified significant Project impacts to a less than significant level.

Cumulative Impact 3.9.5

Growth and development will increase substantially by 2035. The 2011 RTP, by increasing mobility and by including transportation measures, influences the pattern of this development. The 2011 RTP's influence on growth would contribute to the conversion of undeveloped land, resulting in impacts to water quality, stormwater infiltration and groundwater recharge, flood hazard impacts, and wastewater treatment services, and water demand.

The growth projection associated with the 2011 RTP would substantially increase the amount of developed land in the County. With the 2011 RTP, the amount of new developed acreage (consuming previously vacant land) would be considerable.

Mitigation Measures

Mitigation Measures 3.9.1 through 3.9.4 shall be applied to all development projects, as feasible, in addition to the following measures:

- Local governments should encourage Low Impact Development and natural spaces that reduce, treat, infiltrate and manage stormwater runoff flows in all new developments.
- Local governments should implement green infrastructure and water-related green building practices through incentives and ordinances. Green building resources include the U.S. Green Building Council's Leadership in Energy and Environmental Design, Green Point Rated Homes, and the California Green Builder Program.
- Local governments should integrate water resources planning with existing greening and revitalization initiatives, such as street greening, tree planting, development and restoration of public parks, and parking lot conversions, to maximize benefits and share costs.
- Developers, local governments, and water agencies should maximize permeable surface area in existing urbanized areas to protect water quality, reduce flooding, allow for groundwater recharge, and preserve wildlife habitat. New impervious surfaces should be minimized to the greatest extent possible, including the use of in-lieu fees and off-site mitigation.
- Future impacts to water quality shall be avoided through cooperative planning, information sharing, and comprehensive pollution control measure development.
- Local jurisdictions and water agencies are encouraged to continue regional-scale planning for improved stormwater management and groundwater recharge. Future adverse impacts shall be avoided through cooperative planning, information sharing, and comprehensive implementation efforts.
- Local governments should prevent development in flood hazard areas that do not have appropriate protections, especially in alluvial fan areas of the region.
- Local jurisdictions should encourage new development and industry to locate in those service areas with existing wastewater infrastructure and treatment capacity, making greater use of those facilities prior to incurring new infrastructure costs.
- Wastewater treatment agencies are encouraged to have expansion plans, approvals and financing in place once their facilities are operating at 80 percent of capacity.
- Local jurisdictions should promote reduced wastewater system demand by: designing wastewater systems to minimize inflow and increase upstream treatment and infiltration to the extent feasible, reducing overall source water generation by domestic and industrial users, deferring development approvals for industries that generate high volumes of wastewater until wastewater agencies have expanded capacity.
- Project developers and agencies should consider potential climate change hydrology and attendant impacts on available water supplies and reliability in the process of creating or modifying systems to manage water resources for both year round use and ecosystem health.
- Local water agencies should continue to evaluate future water demands and establish the necessary supply and infrastructure to meet that demand.
- Developers, local governments, and water agencies should include conjunctive use as a water management strategy when feasible.
- Developers and local governments should reduce exterior uses of water in public areas, and should promote reductions in private homes and businesses, by shifting to drought-tolerant native landscape plantings (xeriscaping), using weather-based irrigation systems, educating other public agencies about water use, and installing related water pricing incentives.
- Future impacts to water supply shall be minimized through cooperation, information sharing, and program development.

Significance After Mitigation

New development expected by 2035 would create adverse impacts on water quality, stormwater infiltration and groundwater recharge, flood hazard impacts, and wastewater treatment service and water demand impacts.

The 2011 RTP's influence on growth distribution is a cumulatively considerable contribution to this significant impact.

3.10 LAND USE & PLANNING

This section of the EIR contains an overview of land use regulations in Kern County. It also discusses existing land uses and potential impacts that may result from implementation of the Project. City and county governments provide the most direct regulation of land use and development in the County, but federal and state levels of government also participate in land use regulation and planning for the County. The following paragraphs provide definitions of relevant land use regulations.

Regulatory

Federal Regulations

- National Environmental Policy Act (NEPA)

  The National Environmental Policy Act (NEPA) provides general information on effects of federally funded projects. The act was implemented by regulations included in the Code of Federal Regulations (40CFR6). The code requires careful consideration concerning environmental impacts of federal actions or plans, including projects that receive federal funds. The regulations address impacts on land uses and conflicts with state, regional, or local plans and policies, among others. They also require that projects requiring NEPA review seek to avoid or minimize adverse effects of proposed actions, and also to restore and enhance environmental quality, as much as possible.

Federal Agencies

- Environmental Protection Agency (EPA)

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

- U.S. Bureau of Land Management (BLM)

  The U.S. Bureau of Land Management (BLM) manages large rural land areas, including land that is environmentally sensitive. The BLM governs uses that are allowed on land that it manages, striving to balance environmental protection and conservation goals with other uses, such as recreation and grazing.

- U.S. Forest Service (USFS)

  The U.S. Forest Service (USFS) is responsible for the management and conservation of large areas of National Forest land. National forests are primarily managed for outdoor recreation uses (such as camping, hiking, fishing, hunting, skiing, and nature interpretation, among others) and for resource preservation by the USFS.

- U.S. Fish and Wildlife Service (USFWS)

  The U.S. Fish and Wildlife Service (USFWS) administer the Federal Endangered Species Act (FESA), which designates critical habitat for endangered species. This enables USFWS to carry out its mission to conserve, protect, and enhance the nation's fish and wildlife and their habitats for the continuing benefit of people. Critical

habitat areas cannot be disturbed without permission from the USFWS and other federal agencies, depending on land ownership. The USFWS also manages a system of land and waters for the conservation of wildlife and associated ecosystems. These National Wildlife Refuges are primarily managed for the preservation and protection of unique or important resources and ecosystems.

- U.S. Army Corps of Engineers (COE)

  The U.S. Army Corps of Engineers (Corps) is responsible for administration of Section 404 of the Clean Water Act (CWA), which governs specified activities in waters of the United States, including wetlands. In this role, the Corps requires that permits be obtained for projects whose plans would place structures, including dredged or filled materials, within navigable waters or wetlands, or result in alteration of such areas.

- U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS)

  The Natural Resources Conservation Service (NRCS) maps soils and farmland uses to provide comprehensive information necessary for understanding, managing, conserving and sustaining the nation's limited soil resources. One of the NRCS' responsibilities is to manage the Farmland Protection Program, which provides funds to aid in the purchase of development rights to keep productive farmland in agricultural uses. Working through existing programs, USDA joins with state, tribal, and local governments, as necessary, to acquire conservation easements or other interests from landowners.

State Regulations

- California Environmental Quality Act (CEQA)

  CEQA defines a significant impact on the environment as a substantial, or potentially substantial, adverse change in the physical conditions within the area affected by the project. Land use is a required impact assessment category under CEQA. CEQA documents generally evaluate land use in terms of compatibility with the existing land uses and consistency with local general plans and other local land use controls (zoning, specific plans, etc).

State Agencies

- California Department of Transportation (Caltrans)

  Caltrans' jurisdiction includes the rights-of-way associated with state and interstate routes within California. Any work performed within a federal or state transportation corridor is subject to Caltrans regulations governing allowable actions and modifications to the right-of-way. Caltrans issues encroachment permits on land within their jurisdiction to ensure encroachment is compatible with the primary uses of the State Highway System, to ensure safety, and to protect the state's investment in the highway facility. The encroachment permit requirement applies to persons, corporations, cities, counties, utilities, and other government agencies.

- California Department of Forestry and Fire Protection (CDF)

  The California Department of Forestry and Fire Protection (CDF) reviews and approves plans for timber harvesting on private lands. In addition, the CDF plays a role in planning development in forested areas as a part of its responsibility for fighting wild land fires.

- California Department of Parks and Recreation (CDPR)

  The principal mission of the California Department of Parks and Recreation (CDPR) is to provide sites for a variety of recreational and outdoor activities to California residents and tourists. Natural resource management and protection is also a part of the mission of CDPR. Different park designations dictate the extent to which natural resources are a management priority; natural preserves, state parks, state reserves and state wilderness designations are terms, which indicate that an area has outstanding natural features. The California Department of Parks and Recreation is a trustee agency that owns and operates all state parks and participates in land use planning affecting state parkland.

- California Department of Conservation

  In 1975, the Natural Resources Conservation Service began production of agricultural resource maps based on soil quality and land use. In 1982, the State of California created the Farmland Mapping and Monitoring Program within the California Department of Conservation to carry on the mapping activity from the NRCS on a continuing basis. The California Department of Conservation also administers the Williamson Act for the conservation of farmland and other resource-oriented laws. The Williamson Act is designed to preserve agricultural and open space lands by discouraging their premature and unnecessary conversion to urban uses. Williamson Act contracts, also known as agricultural preserves, offer tax incentives for agricultural land preservation by ensuring that land will be assessed for its agricultural productivity rather than its highest and best uses.

- State Lands Commission

  According to the State Lands Commission (SLC), when California was admitted to the Union, it acquired approximately 4 million acres of sovereign land underlying the state's navigable waterways, including the waters and underlying beds of rivers, lakes, streams, and sloughs. The SLC holds the lands subject to the Public Trust for commerce, navigation, fisheries, and open space preservation. The SLC has developed a list of State-owned and State Public Trust lands in Kern County. This list is incorporated by reference.

- California Department of Fish and Game (CDFG)

  The California Department of Fish and Game (CDFG) is mandated to manage California's diverse fish, wildlife, and plant resources, and the habitats upon which they depend, for their ecological values and for their use and enjoyment by the public. In particular, CDFG is required under the California Endangered Species Act, the California Native Plant Protection Act, the California Environmental Quality Act and the Natural Community Conservation Planning Act to conserve species through listing, habitat acquisition and protection, review of local land use planning, multi-species conservation planning, stewardship, recovery, research, and education. The CDFG protects rare, threatened and endangered species by managing habitats in legally designated ecological preserves or wildlife areas.

- Senate Bill 375

  SB 375, signed in September 2008 (Chapter 728, Statutes of 2008), aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a sustainable communities strategy (SCS) or alternative planning strategy (APS) that will prescribe land use allocation in that MPOs regional transportation plan. CARB, in consultation with MPOs, will provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction

strategies to achieve the targets. CARB is also charged with reviewing each MPO's SCS or APS for consistency with its assigned targets. If MPOs do not meet the GHG reduction targets, transportation projects may not be eligible for funding programmed after January 1, 2012.

This law also extends the minimum time period for the regional housing needs allocation cycle from five years to eight years for local governments located within an MPO that meets certain requirements. City or county land use policies (including general plans) are not required to be consistent with the regional transportation plan (and associated SCS or APS). However, new provisions of CEQA would incentivize (through streamlining and other provisions) qualified projects that are consistent with an approved SCS or APS, categorized as "transit priority projects."

The Kern Regional Blueprint Program, led by Kern Council of Government, is part of a larger 8-county San Joaquin Valley wide process. At both the County and Valley levels, the blueprint process will result in a preferred regional transportation, land use and environmental vision responding to the many challenges associated with anticipated population growth over the next 40 years.

- Population will nearly triple by the year 2050: The Kern region's population is projected to grow from today's population of approximately 800,000 to 1,600,000 by the year 2030 and to 2,100,000 by the year 2050.

- Vehicle miles traveled will nearly triple by the year 2050. In 2008, Kern residents will have logged an estimated 19,400,000 vehicle miles. This number is expected to go up to 34,000,000 in 2030 and 60,000,000 in 2050.

- Households will nearly triple by the year 2050: The Kern region host approximately 256,000 households today, but is projected to host 429,000 by the year 2030 and 671,000 by the year 2050.

- Over 90% of Kern County's land is in use: Air space, agriculture, flood plains, oil production, public lands, steep slopes, and urban areas account for the region's "in use" land, all of which are difficult or immovable barriers to expanding residential land uses.

The Kern region needs a multi-pronged approach to shape our communities in ways that preserve the quality of life we enjoy today and to improve those aspects we believe should be difference for future generations.

Local Controls

♦ Local Agency Formation Commissions

Under state law, each county must have a local agency formation commission (LAFCO). A LAFCO is the agency that carries responsibility for creating orderly local government boundaries, with the goal of encouraging "planned, well-ordered, efficient urban development patterns," the preservation of open space lands, and the discouragement of urban sprawl. A LAFCO typically consists of two county supervisors, two representatives of the county's cities, and one member of the public. Many LAFCOs also include one special district representative. While LAFCOs have no land use power, their actions determine which local government will be responsible for planning new areas.

LAFCOs address a wide range of boundary actions, including creation of spheres of influence for cities, adjustments to boundaries of special districts, annexations, incorporations, detachments of areas from cities, and dissolutions of cities. The definition of a city's sphere of influence is frequently an indication of the city's ultimate boundaries. Since 1992, state law requires that incorporation of a new city must not financially harm the

county and must result in a positive cash flow for the new city, a requirement that has slowed the rate of new city incorporation.

- Local Control Mechanisms

General Plans: The most comprehensive land use planning for the County is provided by city and county general plans, which local governments are required by state law to prepare as a guide for future development. The general plan contains goals and policies concerning topics that are mandated by state law and others, which the jurisdiction may have chosen to include. Required topics are land use, circulation, housing, conservation, open space, noise, and safety. Local governments frequently choose to address other topics, including public facilities, parks and recreation, community design, and growth management, among others. City and county general plans must be consistent with each other and County general plans must cover areas not included by city general plans (e.g., unincorporated areas).

Specific and Master Plans: Specific or Master Plans are sometimes developed by a city or county to address smaller, more specific areas within its jurisdiction. These more localized plans provide for focused guidance for developing a specific area and contain development standards tailored to the area, as well as systematic implementation of the general plan.

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

Environmental Setting

Existing Land Use Within the Region

Land uses throughout the region, as adopted by local cities and counties, are depicted in the various General Plan Land Use Maps prepared, adopted, and on file with the cities and the County and incorporated by reference.

- Residential Land Use

Kern County includes the Cities of Bakersfield and a number of smaller cities and communities. As one moves away from urban centers, parcel sizes tend to become larger and more dependent upon livestock and agriculture. Urban residential zones are typically located within the incorporated cities and allow small lots and relatively high densities.

The largest residential category within the County is rural residential. This category permits one dwelling unit on parcels ranging from one (1) acre to over 20 acres.

- Commercial Land Use

Commercial zoning categories also represent an important land use classification within the County. Commercial zoning is typically found in the urban centers and in suburban developments near large residential concentrations in order to allow for the provision of goods and services.

- Industrial/Special Classifications

  Remaining areas of the County are zoned for industry, agriculture, open space, and other special uses. A majority of the land in the eastern portion of the County is under the jurisdiction of the state and federal government.

- Unincorporated Areas

  In addition to large state and federally owned areas, a number of unincorporated communities are located in Kern County. These communities, as well as other unincorporated areas are governed by the Kern County General Plan adopted in June 2004.

Regulatory Framework

Land uses within each city and the County are governed by general plans, which designate appropriate land uses throughout the jurisdiction and define specific goals, policies and objectives. In general, most plans recognize existing land uses and determine acceptable uses for future development of land currently used for agriculture or open space. General plans consist of a number of elements, including land use, circulation, housing, conservation, open space, noise, and safety. The general plan must be comprehensive and internally consistent. Of particular importance is the consistency between the circulation and land use elements. The general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, and other public utilities and facilities must be consistent with the general distribution and intensity of land for housing, business, industry, open space, education, public areas, waste disposal facilities, agriculture, and other public and private uses.

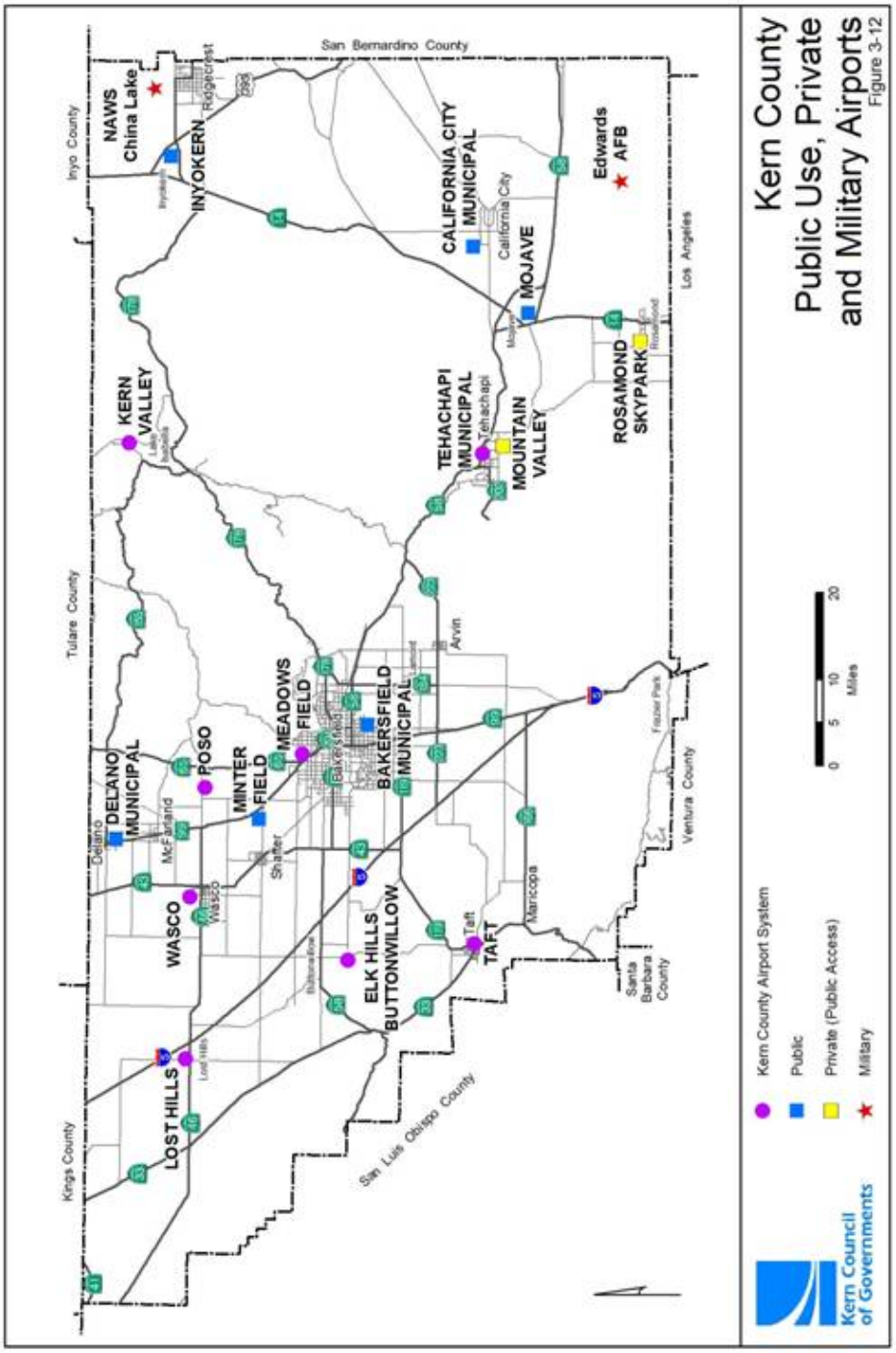
Airport Land Use Commission

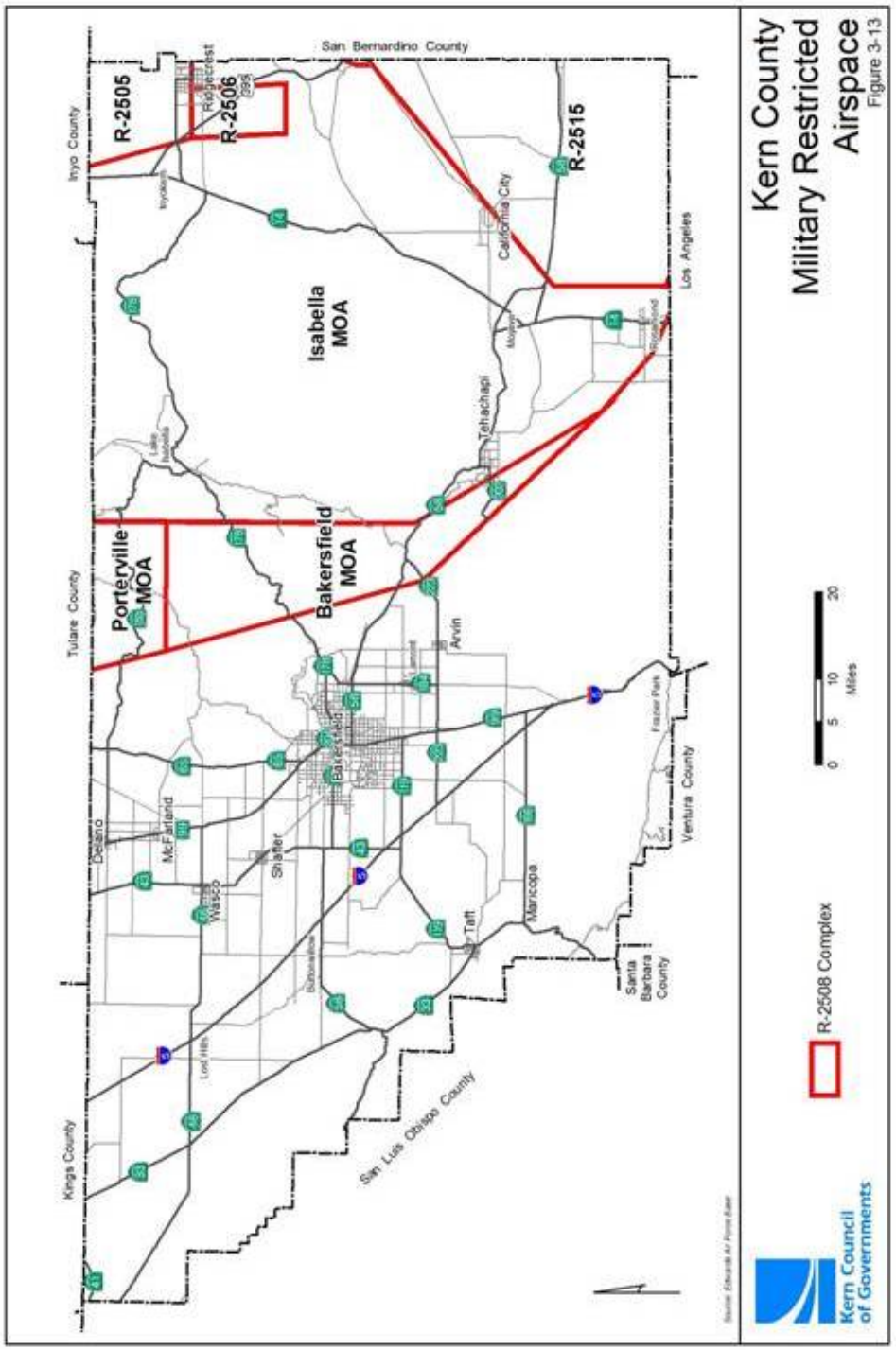
In each county containing a public use airport, an Airport Land Use Commission (ALUC) is required to assist local agencies in ensuring compatible land uses in the vicinity of existing or proposed airports; to coordinate planning at state, regional and local levels; to prepare and adopt an airport land use plan as required by Public Resources Code Section 21675; to review plans, regulations or locations of agencies and airport operators; and to review and make recommendations regarding the land uses, building heights, and other issues relating to air navigation safety and promotion of air commerce.

The County of Kern is designated as the agency responsible for carrying out functions of the Kern County Airport Land Use Commission. The Commission's Airport Land Use Policy Plan and provides the criteria for evaluating land use compatibility between proposed development in the vicinity of the County's public-use, general aviation airport facilities. There are a total of thirteen (13) public use airports affected (reference Figure 3-12). Private and military airports within Kern County are also shown in Figure 3-12. Restricted airspace in the County is depicted in Figure 3-13.

Future Land Use

The future pattern of land uses will remain relatively constant at a countywide level. While urbanized areas will continue to increase in size, the number of acres utilized for development to accommodate the projected population increase is comparatively small. The City of Bakersfield will remain the predominant urban centers in Kern County, with the other communities in the County representing a second tier of urban land use. The County's basic land use policy encourages the concentration of urban development in existing cities and infill of vacant land in urban areas to protect agricultural land.


Kern County
Public Use, Private
and Military Airports
Figure 3-12
Kern County Airport System
Public
Private (Public Access)
Military
Kern Council of Governments
0 5 10 20
Miles
San Bernardino County
Inyo County
Tulare County
Kings County
San Luis Obispo County
Santa Barbara County
Ventura County
Los Angeles
NAWS China Lake
INYOKERN
CALIFORNIA CITY MUNICIPAL
Edwards AFB
MOJAVE
KERN VALLEY
TEHACHAPI MUNICIPAL
MOUNTAIN VALLEY
ROSAMOND SKYPARK
DELANO MUNICIPAL
POSO
MINTER FIELD
MEADOWS FIELD
BAKERSFIELD MUNICIPAL
WASCO
ELK HILLS BUTTONWILLOW
TAFT
LOST HILLS


Kern County
Military Restricted
Airspace
Figure 3-13
R-2505
R-2506
R-2515
Isabella
MOA
Bakersfield
MOA
Porterville
MOA
San Bernardino County
Inyo County
Tulare County
Kings County
San Luis Obispo County
Santa Barbara County
Ventura County
Los Angeles
Ridgecrest
California City
Tehachapi
Arvin
Bakersfield
Delano
McFarland
Wasco
Shafter
Taft
Maricopa
Fraser Park
Lake Isabella
Lost Hills
Buttonwillow
0 5 10 20
Miles
R-2508 Complex
Kern Council
of Governments

Methodology

Those uses most likely to be affected by the construction and implementation of transportation and related projects are the focus of this land use analysis. Land use impacts are evaluated by identifying the particular type of land use that could be affected by the projects. Because of the comprehensive land use planning information available in them, the general plans for cities and counties were used to identify projected land uses.

Information contained in the general plans of cities and counties were the basis of the evaluation of potential impacts to agricultural and open space areas within the region. In addition to these resources, information from the California Department of Conservation was used to identify potential impacts to agricultural areas.

Environmental Impacts, Mitigation Measures, and Significance After Mitigation

Criteria for Significance

In order to determine potentially significant land use impacts resulting from the projects and programs contained in the 2011 RTP, the following significance criteria were used. RTP projects would produce significant adverse land use impacts if the following circumstances occurred:

- Substantial loss of agricultural, open space, or other resource land;
- Inconsistency with applicable adopted land use plans and policies;
- Incompatibility with adjacent land uses, including impacts to sensitive receptors; and
- Physically divide an established community.

Impact 3.10.1

Strategies aimed at addressing the transportation needs of future growth patterns were considered during development of the RTP. The document promotes alternatives to the automobile through enhanced funding (beyond that identified in the 2011 RTP) for transit and other alternative modes of transportation such as bicycle facilities, trails, airport improvements, and others. Implementation of strategies proposed in the RTP could result in positive changes to land uses. This would be considered a beneficial impact.

Implementation of transit improvements included in the Plan could influence land use patterns throughout the region. Land use and transportation policies are emphasized in the RTP in order to address automobile traffic and air quality concerns. Growth patterns that promote alternatives to the automobile by creating mixed-use developments, which would include residences, shops, parks, and civic institutions, linked to pedestrian-and-bicycle friendly public transportation centers, are also discussed in the 2011 RTP. Design features, such as improved street connectivity, public amenities, and a concentration of residences and jobs in proximity to transit routes could be incorporated into mixed-use developments; therefore, addressing automobile traffic and air quality concerns. Implementation of enhanced alternative modes as provided by the RTP could result in more balanced land use conditions throughout the region, as the mixed-use developments would result in a concentration of jobs and residences in close proximity to one another.

While the RTP is likely to result in a positive outcome related to supportive land use conditions for alternative forms of transportation such as transit, other projects in the RTP could have significant impacts on land use patterns, potentially causing land use growth and development to occur in areas not previously envisioned for growth and development. This impact could be especially significant on agricultural land uses within the County.

Mitigation Measures

The impact on significant agricultural resources will be evaluated as part of the appropriate improvement project-specific environmental review. Mitigation measures will be identified to minimize impacts. Implementation agencies will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with all mitigation measures.

- Individual projects will be consistent with local land use plans and policies that designate areas for urban land use and preserve agricultural lands that support the economic viability of agricultural activities.

- Prior to final approval of each individual improvement project, the implementing agency will conduct the appropriate project-specific environmental review, including consideration of potential land use impacts.

Significance After Mitigation

While implementation and monitoring of the above mitigation measures will provide the framework and direction for subsequent project-specific mitigation designed to avoid or reduce the identified significant Project impacts, it is probable that such impacts will remain significant and unavoidable.

Impact 3.10.2

There are many sensitive receptors located in the urban and rural areas of the County. They include residences, educational facilities, medical facilities, and places of worship. Sensitive receptors located in the vicinities of proposed improvement projects could be impacted by construction and implementation of the proposed highway, arterial and transit projects. This would be considered a potentially significant impact.

Construction of new parkways and connectors, widening of existing highways and the construction of new interchanges are some of the highway and arterial projects. However, many other types of transportation projects would not involve construction activities. Many proposed public transit projects involve service alterations along existing streets, highways, and rail lines.

Generally, proposed projects are of the following two types:

- *New Systems* (new highway and transit facilities); or
- *Modifications to Existing Systems* (widening roads, addition of carpool lanes, grade crossings, intelligent transportation systems, maintenance, and service alterations).

Sensitive receptors could be impacted because of the proposed individual improvement projects. These possible impacts would depend on several factors such as the type of individual improvement project proposed for the area, projected land use designation of the area, and duration of proposed construction activities. For the most part, improvement projects involving new systems would pose the greatest potential impacts to sensitive receptors. Specifically, sensitive receptors located in the vicinities of such improvement projects could be significantly impacted by the construction and operation of the proposed projects. Additionally, modification projects would result in short-term construction and long-term impacts to sensitive receptors.

Mitigation Measures

Impacts to sensitive receptors will be evaluated as part of the appropriate project-specific environmental review, and mitigation measures will be identified to minimize impacts. Implementation agencies will be responsible for ensuring

adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with all mitigation measures.

- Prior to commencing construction activities on individual projects, project implementation agencies will comply with applicable federal, state and applicable city and county land use plans, policies, and regulations.
- Prior to commencing construction activities with individual projects, implementation agencies will obtain necessary local permits and meet conditions for approval from applicable cities and counties.
- Prior to final approval of each individual improvement project, the implementing agency will conduct the appropriate project-specific environmental review, including consideration of potential land use impacts.
- Potential significant impacts to land uses will be mitigated.

Significance After Mitigation

This impact would remain significant and unavoidable because of the large number of individual projects that may potentially affect sensitive receptors.

Impact 3.10.3

Construction and implementation of projects would result in the loss of open space and community recreation areas. This would be considered a potentially significant impact. Pockets of open space vary in size and location throughout the County and within the cities. Open space land uses include agricultural areas, public parks, recreational facilities, and areas planned for such uses.

The Project includes highway, arterial and transit projects proposed to be located in or adjacent to areas designated for open space. The potential for significant impacts to natural habitats and community recreation exists, since these projects may be constructed in areas that have habitat and recreational value. Construction of RTP projects could result in the disturbance or loss of open space and recreational resources. Specifically, new projects involving construction would be most likely to result in impacts to open space areas.

Mitigation Measures

The impact on open space and community recreation areas will be evaluated as part of the appropriate individual improvement project-specific environmental review and mitigation measures will be identified to minimize impacts. Implementation agencies will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with all mitigation measures.

- Implementation agencies will ensure that projects are consistent with federal, state, and local plans that preserve open space and recreation.
- Implementation agencies will identify open space and recreation areas that could be preserved and will include mitigation measures (such as dedication or payment of in-lieu fees) for the loss of open space.
- Prior to final approval of each individual improvement project, the implementing agency will conduct the appropriate project-specific environmental review, including consideration of loss of open space and recreation.
- Potential significant impacts to open space will be mitigated.

- For projects that require approval or funding by the U.S. Department of Transportation, implementation agencies will comply with Section 4(f) of the U.S. Department of Transportation Act.

Significance After Mitigation

It is anticipated that implementation of the Project could potentially result in the loss or disturbance of open space; therefore, this impact would remain significant and unavoidable.

Impact 3.10.4

Implementation of the projects and programs contained in the 2011 RTP could potentially result in the disturbance or loss of significant agricultural resources throughout the Kern region. This would be considered a potentially significant impact. The County contains areas designated by the state as Prime Farmland, Unique Farmland, and Farmland of Statewide Importance. These areas are interspersed throughout urban areas or are located in undeveloped portions of the region. Development of highway, arterial and transit projects proposed under the RTP could potentially result in the disturbance or loss of some of these designated areas. Specifically, new projects involving construction would be most likely to result in impacts to these areas.

Mitigation Measures

The impact on significant agricultural resources will be evaluated as part of the appropriate individual improvement project-specific environmental review, and mitigation measures will be identified to minimize impacts. Implementation agencies will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with all mitigation measures.

- Individual projects will be consistent with federal, state, and local policies that preserve agricultural lands and support the economic viability of agricultural activities, as well as policies that provide compensation for property owners if preservation is not feasible.

- For projects in agricultural areas, individual improvement project implementation agencies will contact the California Department of Conservation and the County Agricultural Commissioner's office to identify the location of prime farmlands and lands that support crops considered valuable to the local or regional economy.

- Prior to final approval of each individual improvement project, the implementing agency will establish conservation easement programs to mitigate impacts to prime farmland.

- Prior to final approval of each individual improvement project, the implementing agency will avoid impacts to prime farmlands or farmlands that support crops considered valuable to the local or regional economy.

- Prior to final approval of each individual improvement project, the implementing agency will encourage enrollments of agricultural lands in the Williamson Act.

Significance After Mitigation

It is anticipated that implementation of the Project could potentially result in the loss or disturbance of significant agricultural resources; therefore, this impact would be considered significant and unavoidable.

Impact 3.10.5

The Project has the potential to conflict with applicable adopted local land use plans and policies.

Most of the projects submitted for inclusion in the RTP are developed through a local review process that involves local jurisdictions working with Kern COG. For this reason, it is unlikely that any individual improvement project submitted would be inconsistent with a local jurisdiction's plan.

Mitigation Measures

No mitigation measures are necessary.

Significance After Mitigation

Not applicable.

Cumulative Impact 3.10.6

Growth and development in the County will increase substantially by 2035. The 2011 RTP, by increasing mobility and including transportation measures, influences the pattern of this development. The 2011 RTP's influence on growth contributes to regional cumulatively considerable impacts to land use and would change the intensity of land use in some areas.

Mitigation Measures

The mitigation measures listed above for Impacts 3.10.1 through 3.10.5 would be applied as mitigation for this impact. In addition, the following measure would apply.

- Regional planning efforts will be used to build a consensus in the region to support changes in land use to accommodate future population growth while maintaining the quality of life in the region.

Significance after Mitigation

In order to accommodate the projected population totals assumed for 2035, the region will need to change land uses and increase the intensity of some existing land use. The cumulative impact would remain significant.

3.11 NOISE

This section provides information about the effects of noise from the Project. The methodology and the criteria used to evaluate the significance of noise-related impacts as well as mitigation measures are discussed.

Description of Noise and Terminology

Noise is often described as unwanted sound, and thus is a subjective reaction to characteristics of a physical phenomenon. Researchers have generally agreed that A-weighted sound pressure levels (sound levels) are well correlated with subjective reaction to noise. Variations in sound levels over time are represented by statistical descriptors, and by time-weighted composite noise metrics such as the Day/Night Average Level (Ldn). The unit of sound level measurement is the decibel (dB), sometimes expressed as dBA. Throughout this analysis, A-weighted sound pressure levels will be used to describe traffic noise.

Sound is defined as any pressure variation in air that the human ear can detect. If the pressure variations occur frequently enough (at least 20 times per second), they can be heard, and hence, are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second, called hertz (Hz) by international agreement. The speed of sound in air is approximately 770 miles per hour, or 1,130 feet/second. Knowing the speed and frequency of a sound, one may calculate its wavelength; the physical distance in air from one compression of the atmosphere to the next. An understanding of wavelength is useful in evaluating the effectiveness of physical noise control devices such as mufflers and barriers, which depend upon either absorbing or blocking sound waves to reduce sound levels. Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold of 20 micropascals as a point of reference, defined as 0 dB. Other sound pressures are then compared to the reference pressure, and the logarithm is taken to keep the numbers in a practical range.

The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB. Another useful aspect of the decibel scale is that changes in levels (dB) correspond closely to human perception of relative loudness. The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by weighting the frequency response of a sound level measurement device (called a sound level meter) by means of the standardized A-weighting network. There is a strong correlation between A-weighted sound levels (expressed as sound levels in dB) and community response to noise. For this reason, the A-weighted sound pressure level has become the standard tool of environmental noise assessment.

Community noise is commonly described in terms of the "ambient" noise level, which is defined as the all-encompassing noise level associated with a given noise environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (Leq), which corresponds to a steady-state sound level containing the same total energy as a time-varying signal over a given time period (usually one hour). The Leq is the foundation of the composite noise descriptors such as Ldn, and shows very good correlation with community response to noise.

Two composite noise descriptors are in common use today: Ldn (Day-night Average Level) and CNEL (Community Noise Equivalent Level). The Ldn is based upon the average hourly Leq over a 24-hour day, with a +10 decibel weighting applied to nighttime (10:00 p.m. to 7:00 a.m.) Leq values. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. The CNEL, like Ldn, is based upon the weighted average hourly Leq over a 24-hour day, except that an additional +4.8 decibel penalty is applied to evening (7:00 p.m. to 10:00 p.m.) hourly Leq values. The CNEL was developed for the California Airport Noise Regulations, and is applied specifically to airport/aircraft noise assessment. For this reason, the Ldn descriptor, rather than CNEL, is used for the assessment of traffic noise levels in the County.

Noise in the community has often been cited as being a health problem, not in terms of actual damage such as hearing impairment, but in terms of inhibiting general well-being and contributing to undue stress and annoyance. The health effects of noise in the community arise from interference with human activities such as sleep, speech, recreation, and tasks demanding concentration or coordination. When community noise interferes with human activities or contributes to stress, public annoyance with the noise source increases, and the acceptability of the environment for people decreases. This decrease in acceptability and the threat to public well-being are the bases for land use planning policies preventing exposure to excessive community noise levels.

To control noise from fixed sources, which have developed from processes other than zoning or land use planning, many jurisdictions have adopted community noise control ordinances. Such ordinances are intended to abate noise nuisances and to control noise from existing sources. They may also be used as performance standards to judge the creation of a potential nuisance, or potential encroachment of sensitive uses upon noise-producing facilities. Community noise control ordinances are generally designed to resolve noise problems on a short-term basis (usually by means of hourly noise level criteria), rather than on the basis of 24-hour or annual cumulative noise exposures.

Noise ordinance criteria are not applicable to traffic on public roadways. However, General Plan Noise Elements provide noise standards for new noise-sensitive land uses affected by transportation noise sources. General Plan Noise Elements frequently contain general noise mitigation measures for use in reducing the potential for adverse noise impacts associated with the development of new noise-sensitive or noise-producing land uses.

For new noise-sensitive land uses affected by transportation noise sources, many jurisdictions consider land use compatibility criteria of 60 to 65 dB Ldn as being “normally acceptable” for such uses. Typical options for mitigation of excessive traffic noise levels include the use of setbacks or buffer areas between the roadways and the proposed noise-sensitive land use, noise barriers, residential unit design and improvements to building facade construction. Because many rural residential areas experience very low noise levels, residents may express concern about the loss of "peace and quiet" due to the introduction of a sound, which was not audible previously. In very quiet environments, the introduction of virtually any change in local activities will cause an increase in noise levels. A change in noise level and the loss of "peace and quiet" is the inevitable result of land use or activity changes in such areas. Audibility of a new noise source or increases in noise levels within recognized acceptable limits are not usually considered to be significant noise impacts, but these concerns should be addressed and considered in the planning and environmental review processes.

Regulatory

In general, the federal government sets noise standards for transportation noise sources that are related to interstate commerce. These typically include aircraft, trains, and trucks. State governments establish noise standards for those sources not regulated by federal standards such as automobiles, light trucks, motor boats and motorcycles. Other noise sources associated with construction, as well as industrial, and commercial activities are usually regulated by noise ordinances and general plan policies, which are established by local jurisdictions.

Federal Regulations

The Federal Highway Administration has established noise abatement criteria that must be considered for the design of federal or federally funded highway projects. Federal regulations also set noise limits for medium and heavy trucks (over 4.5 gross tons). The federal standard for truck pass by noise at 15 meters (50 feet) is 80 dB. These standards are implemented through federal regulatory controls on truck manufacturers. Noise generated from aircraft operated in the United States is also subject to federal regulation, which is established by the Federal Aviation Administration. Aircraft manufacturers must comply with these regulations prior to certification of the aircraft. Similarly, locomotives are also subject to federal standards.

- Federal Aviation Administration (FAA)

  Aircraft operated in the U.S. are subject to certain federal requirements regarding noise emissions levels. These requirements are set forth in Title 14 CFR, Part 36. Part 36 establishes maximum acceptable noise levels for specific aircraft types, taking into account the model year, aircraft weight, and number of engines. Pursuant to the federal Airport Noise and Capacity Act of 1990, the FAA established a schedule for complete transition to Part 36 "Stage 3" standards by year 2000. This transition schedule applies to jet aircraft with a maximum takeoff weight in excess of 75,000 pounds, and thus applies to passenger and cargo airlines, but not to operators of business jets or other general aviation aircraft.

  Although the National Environmental Policy Act (NEPA) does not establish specific noise standards, the noise impacts of projects are routinely considered as one of the potential environmental consequences of federal actions subject to NEPA.

- Federal Vibration Policies

  The Federal Railway Administration (FRA) and the Federal Transit Administration (FTA) have published guidance relative to vibration impacts. According to the FRA, fragile buildings can be exposed to groundborne vibration levels of 0.5 PPV without experiencing structural damage. The FTA has identified the human annoyance response to vibration levels as 80 VdB.

State Regulations

The state sets standards for light trucks (less than 4.5 gross tons), passenger cars, and other motor vehicles as identified in the California Motor Vehicle Code. The State of California has also established additional noise standards to regulate freeway noise affecting schools and classrooms. Furthermore, the state has adopted noise insulation standards for multi-family residential units, hotels, and motels that are in areas subject to high levels of transportation-related noise.

- California's Airport Noise Standards

  The State of California has the authority to establish regulations requiring airports to address aircraft noise impacts on land uses in their vicinities. The State of California's Airport Noise Standards, found in Title 21 of the *California Code of Regulations*, identify a noise exposure level of CNEL 65 dB as the noise impact boundary around airports. Within the noise impact boundary, airport proprietors are required to ensure that all land uses are compatible with the aircraft noise environment or the airport proprietor must secure a variance from the California Department of Transportation.

- California Department of Transportation (Caltrans)

  The State of California establishes noise limits for vehicles licensed to operate on public roads. For heavy trucks, the State passby standard is consistent with the federal limit of 80 dB. The State passby standard for light trucks and passenger cars (less than 4.5 tons gross vehicle rating) is also 80 dB at 15 meters from the centerline. For new roadway projects, Caltrans employs the Noise Abatement Criteria, discussed above in connection with FHWA.

- California Noise Insulation Standards

  The California Noise Insulation Standards found in the *California Code of Regulations*, Title 24, set requirements for new multi-family residential units, hotels, and motels that may be subject to relatively high levels of

transportation-related noise. For exterior noise, the noise insulation standard is DNL 45 dB in any habitable room and requires an acoustical analysis demonstrating how dwelling units have been designed to meet this interior standard where such units are proposed in areas subject to noise levels greater than DNL 60 dB.

- State Vibration Policies

  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, and 15 to 30 meters (50 to 100 feet) of a historic building or a building in poor condition.

Local Regulations

The noise element and local noise ordinances are the two primary documents that local jurisdictions use to set noise standards in their community. A noise element is a required component of each jurisdiction's General Plan. The noise element is required to analyze the current and future noise levels associated with local noise sources, such as freeways and freeways, major streets and arterials, rail operations, aviation activities and local industrial plants and develop noise contours for these sources using CNEL or Ldn.

The noise element also includes implementation measures and possible solutions for existing and potential noise problems. The noise elements of the cities and the County typically apply land use compatibility criteria of 60-65 dB Ldn as being normally acceptable for new residential developments affected by transportation noise sources. The intent of these standards is to provide an acceptable noise environment for outdoor activities. In addition, an interior noise level criterion of 45 dB Ldn is commonly applied to residential land uses. The intent of this standard is to provide a suitable environment for indoor communication and sleep. These criteria are consistent with the interior and exterior noise level standards applied by the Federal Department of Housing and Urban Development (HUD).

The above-described noise standards are commonly applied to new residential projects affected by transportation noise sources, rather than the increase in traffic noise levels resulting from regional growth, such as in this study. Nonetheless, the local noise criteria are included to provide a frame of reference by which the magnitude of existing and future traffic noise levels can be compared.

Major Noise Sources in Kern County

Noise sources are commonly grouped into two major categories: transportation and non-transportation noise sources. Transportation noise sources include surface traffic on public roadways, railroad line operations, and aircraft in flight. Non-transportation (or fixed), noise sources, commonly consist of industrial activities, railroad yard activities, small mechanical devices (lawnmowers, leaf blowers, air conditioners, radios, etc.), and other sources not included in the traffic, railroad and aircraft category.

- Traffic Noise

  The ambient noise environment in Kern County is defined by a wide variety of noise sources. The most pervasive source of noise in the region is traffic noise. With thousands of miles of roadways in the County, it is difficult to escape the sound of traffic. Traffic noise exposure is mainly a function of the number of vehicles on a given roadway per day, the speed of those vehicles, the percentage of medium and heavy trucks in the traffic volume, and the receiver's proximity to the roadway. Every vehicle passage on every roadway in the region radiates noise.

  Existing high noise levels along major streets and highways are generally caused by traffic and congestion. Potential impacts along these facilities are generally classified as follows:

- Low - L_{dn} 59 dB or below;
- Moderate- L_{dn} 60 dB to 65 dB; and
- High- L_{dn} 66 dB or greater.

The potential for adverse noise impacts is generally moderate to high along most segments of State highways, and is generally low to moderate along most segments of County streets and highways.

- Rail Noise

The region is also affected by freight and passenger railroad operations. While these operations generate significant noise levels in the immediate vicinity of the railroad tracks during train passages, these operations are intermittent and the tracks are widely dispersed throughout the region. For these reasons, the contribution of railroad noise to the overall ambient noise environment in the County is relatively small.

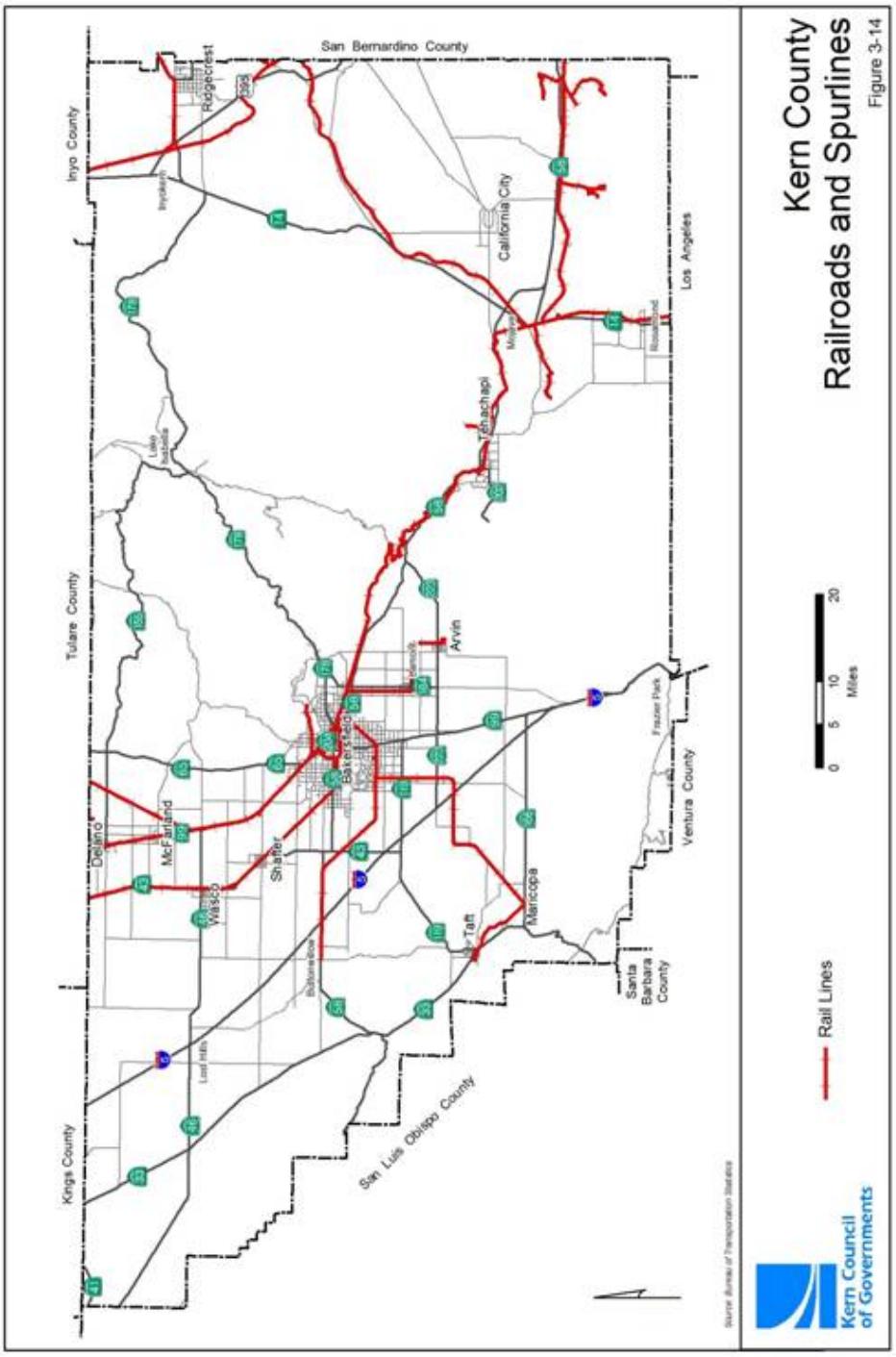
The two main line rail operations in Kern County are the Union Pacific Transportation Company (UP) and the Burlington, Northern and Santa Fe (BNSF). Rail lines in Kern County are depicted on Figure 3-14. Numerous freight train operations per day occur on the UP and BNSF lines that extend through the Valley. The San Joaquin provides passenger service throughout the California's Central Valley with 7 northbound and 7 southbound trains every day (reference Figure 3-15). The Amtrak bus routes are also depicted.

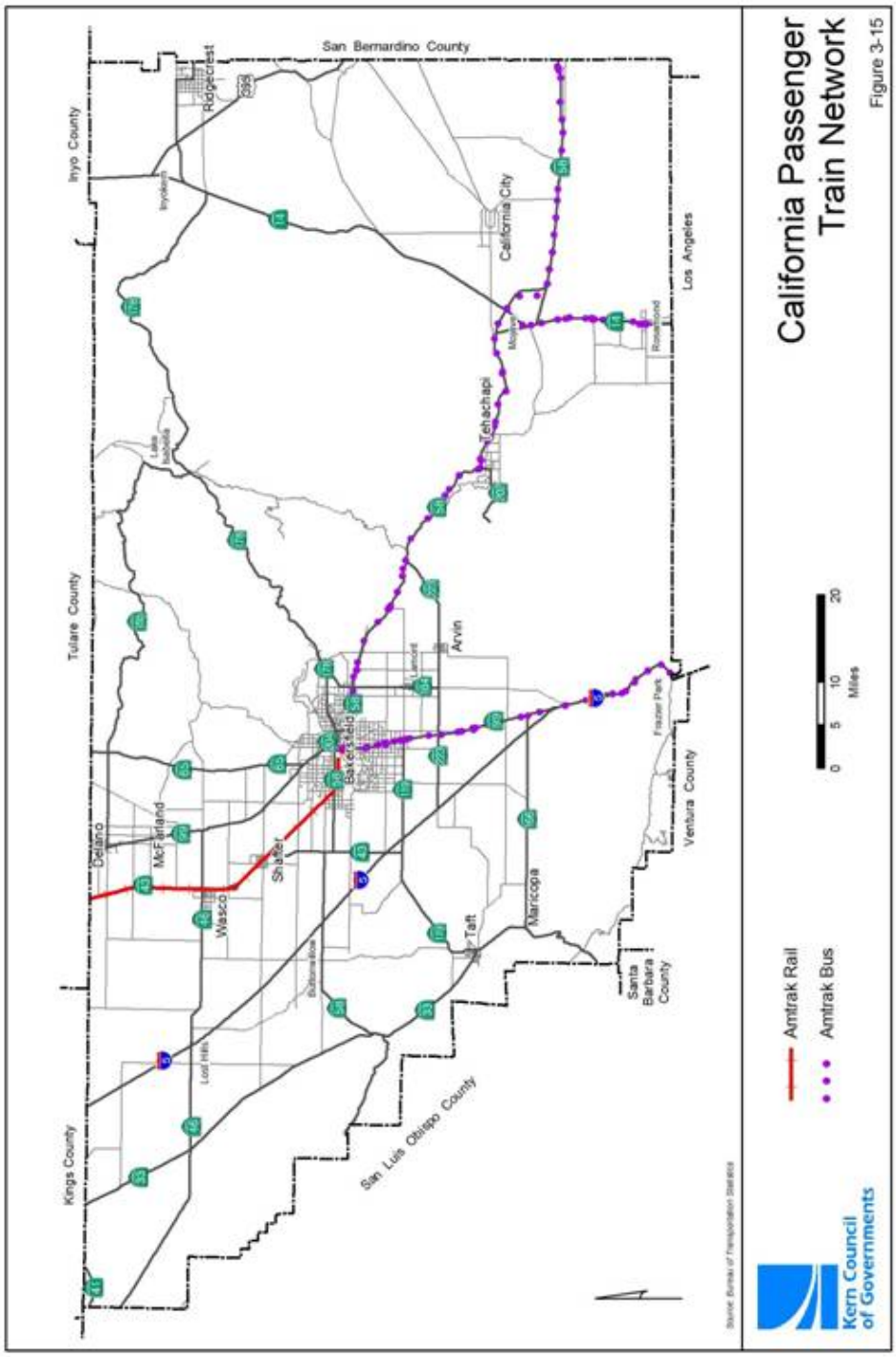
High noise impacts can be expected within approximately 100 feet of the main line railroad tracks, moderate impacts from 100-700 feet, and low impacts at distances greater than about 700 feet. The above-noted impacts may be lesser or greater depending on site-specific factors such as soundwalls, grade crossings and topographic shielding. Insignificant noise impacts can be expected adjacent to the several branch lines in Kern County.

- Airport Noise

Kern County is home to many airports, including public, private and military airports. In addition to the numerous daily aircraft operations, which originate and terminate at these airports daily, over flights of the area by aircraft not utilizing the regional airports frequently, occur. All of these operations contribute in some degree to the overall ambient noise environment in the County. The intensity of aircraft noise exposure depends on one's proximity to the aircraft flight path, the type, speed, and altitude of airplane, as well as atmospheric conditions. The farther away the noise source is, the more the sound propagation from source to receiver is affected by weather.

There are fourteen (14) public use airport facilities in Kern County (reference Chapter 4 of the 2011 RTP and Figure 3-12 in this EIR). Airport noise contours have been established for all airport facilities in the County and are consistent with the Federal Aviation Administration (FAA) Integrated Noise Model. In addition, noise contours for existing and future conditions at each of the airports are contained in plans or studies, including: Airport Master Plans, Airport Land Use Compatibility Plan, Comprehensive Airport Land Use Plans, Airspace Plans, and Airport Layout Plans, which are all incorporated by reference. Each of these plans or studies includes implementation goals, objectives, and policies and/or recommendations to lessen noise impacts.


Kern County
Railroads and Spurlines
Figure 3-14
Rail Lines
0 5 10 20
Miles
Kern Council of Governments
San Bernardino County
Inyo County
Tulare County
Kings County
San Luis Obispo County
Santa Barbara County
Ventura County
Los Angeles
Ridgecrest
California City
Tehachapi
Arvin
Bakersfield
Delano
McFarland
Wasco
Shafter
Taft
Maricopa
Lost Hills


California Passenger Train Network
Figure 3-15
San Bernardino County
Inyo County
Tulare County
Kings County
San Luis Obispo County
Santa Barbara County
Ventura County
Los Angeles
Ridgecrest
California City
Tehachapi
Arvin
Bakersfield
Delano
McFarland
Wasco
Shafter
Taft
Maricopa
Lost Hills
Amtrak Rail
Amtrak Bus
0 5 10 20
Miles
Kern Council of Governments

- Other Noise Sources

  There is a wide variety of industrial and other non-transportation noise sources in the County, including manufacturing operations, oil rigs and refineries, power plants, food packaging and processing facilities, lumber mills, aggregate mining and processing plants, race tracks, shooting ranges, amphitheaters, and car washes, to name a few. Noise generated by these sources varies significantly, but can provide a greater contribution to the local ambient noise environment than traffic, depending on the nature of the noise source. Although non-transportation noise sources can define the ambient noise environment within a given distance to the noise source, the regional ambient noise environment is, nonetheless, defined primarily by traffic.

Noise Barriers

Shielding by barriers can be obtained by placing walls, berms or other structures between the traffic noise source and the receiver. The effectiveness of a barrier depends upon blocking line-of-sight between the traffic and receiver, and is improved with increasing the distance the sound must travel to pass over the barrier as compared to a straight line from source to receiver. For a noise barrier to be effective, it must not only be sufficiently tall to intercept line of sight from noise source to receiver, but it must also be sufficiently long to reduce the potential for sound to flank around ends of the barrier. Barrier effectiveness depends upon the relative heights of the source, barrier and receiver. In general, barriers are most effective when placed close to either the receiver or the traffic noise source. An intermediate barrier location yields a smaller path length difference for a given increase in barrier height than does a location closer to either source or receiver.

For maximum effectiveness, barriers must be continuous and relatively airtight along their length and height. To ensure that sound transmission through the barrier is insignificant, barrier mass should be about 4 lbs. /square foot, although a lesser mass may be acceptable if the barrier material provides sufficient transmission loss in the frequency range of concern. Satisfaction of the above criteria requires substantial and well-fitted barrier materials, placed to intercept line of sight to all significant traffic noise sources. Earth, in the form of berms or the face of a depressed area, is also an effective barrier material. There are practical limits to the noise reduction provided by barriers. For highway traffic noise, a 5 to 10 dB noise reduction may often be reasonably attained. A 15 dB noise reduction is sometimes possible, but a 20 dB noise reduction is extremely difficult to achieve. Barriers usually are provided in the form of walls, berms, or berm/wall combinations. The use of an earth berm in lieu of a solid wall will provide up to 3 dB additional attenuation over that attained by a solid wall alone, due to the absorption provided by the earth. Berm/wall combinations offer slightly better acoustical performance than solid walls, and are often preferred for aesthetic reasons.

Noise barriers currently exist or are planned in many areas of the County adjacent to the state highways. In cases of new residential development adjacent to a major roadway in the County, the responsibility for noise mitigation is placed on the individual improvement project developer. In such cases, noise barriers are commonly constructed just inside the highway right of way. In other cases, local jurisdictions and Caltrans have built barriers as part of roadway improvement projects or barrier retrofit programs.

Methodology

Since noise is a highly localized impact, specific and detailed analyses are most appropriate at the individual improvement project level. Subsequent project-specific EIRs will be required to further analyze the transportation improvements proposed by the Project to determine the magnitude of noise and vibration impacts, and to identify appropriate potential mitigations for each individual improvement project.

Environmental Impacts, Mitigation Measures, and Significance After Mitigation

Criteria For Significance

The Project will result in a significant noise impact if short-term construction or long-term operations of transportation improvement projects proposed by it will:

- Result in noise levels that approach or exceed the FHWA Noise Abatement Criteria or increase substantially above existing levels (a 3 dB change would be considered noticeable);
- Result in extended, substantial construction noise in the vicinity of sensitive receptors; or
- Expose people to generation of excessive ground borne vibrations or ground borne noise.

Impact 3.11.1

Grading and construction activities associated with the proposed highway, arterial, and transit projects would intermittently and temporarily generate noise levels above ambient background levels. Noise levels in the immediate vicinity of the construction sites would increase substantially sometimes for extended durations. This would be considered a potentially significant impact.

Generally, proposed projects are of the following two types:

- *New Systems* (new highway, arterials, interchanges, bridge projects and transit facilities); or
- *Modifications to Existing Systems* (widening roads, addition of carpool lanes, grade crossings, intelligent transportation systems, maintenance, and service alterations).

Construction activities associated with the Project would result in temporary noise increases at nearby sensitive receptors. Impacts to sensitive receptors resulting from these proposed projects would depend on several factors such as the type of individual improvement project proposed for the given area, land use of the given area, and duration of proposed construction activities. Additionally, construction noise levels would fluctuate depending on construction phase, equipment type, and duration of use; distance between noise source and receptor; and presence or absence of barriers between noise source and receptor. In general, sensitive receptors would be significantly impacted by projects involving new systems (new facilities, truck lanes, rail corridors, interchanges, underground rail lines). Specifically, sensitive receptors located in the vicinity of these projects would be significantly impacted by construction of the proposed improvement projects. Additionally, modification projects would result in short-term construction impacts to sensitive receptors. It is not possible under this Program EIR to identify each and every RTP project that may result in impacts to sensitive receptors.

To determine noise impacts and appropriate mitigation, it is necessary to identify a number of variables that may be different for each project including type of project, project geometrics, topography of the surrounding environs, elevation of the project, location of sensitive receptors, and other variables. It is therefore appropriate to undertake a thorough analysis of potential noise impacts during the project development phase of the project. This must be accomplished through applicable rules, procedures, regulations and ordinances.

Mitigation Measures

As part of project-specific environmental review, a detailed evaluation of noise impacts will be undertaken. Project-specific mitigation measures will be identified, as necessary. All mitigation measures will be included in project-level analysis, as appropriate. The implementing agency or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with mitigation measures.

- Implementing agencies will comply with all local sound control and noise level rules, procedures, regulations, and ordinances.

- Implementing agencies will limit the hours of construction to between 6:00 a.m. and 8:00 p.m. on Monday through Friday and between 7:00 a.m. and 8:00 p.m. on weekends.

- Equipment and trucks used for individual improvement project construction will utilize the best available noise control techniques (including mufflers, use of intake silencers, ducts, engine enclosures and acoustically attenuating shields or shrouds) in order to minimize construction noise impacts.

- Impact equipment (e.g., jackhammers, pavement breakers, and rock drills) used for individual improvement project construction will be hydraulically or electrical powered wherever feasible to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatically powered tools is unavoidable, an exhaust muffler on the compressed air exhaust will be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves will be used where feasible, and this could achieve a reduction of 5 dBA. Quieter procedures will be used such as drilling rather than impact equipment whenever feasible.

- Implementing agencies will ensure that stationary noise sources will be located as far from sensitive receptors as possible. If they must be located near existing receptors, they will be adequately muffled.

- Implementing agencies will designate a complaint coordinator responsible for responding to noise complaints received during the construction phase. The name and phone number of the complaint coordinator will be conspicuously posted at construction areas and on all advanced notifications. This person will be responsible for taking steps required to resolve complaints, including periodic noise monitoring, if necessary.

- Noise generated from any rock-crushing or screening operations performed within 3,000 feet of any occupied residence will be mitigated by the individual improvement project proponent by strategic placement of material stockpiles between the operation and the affected dwelling or by other means approved by the local jurisdiction.

- Implementing agencies will direct contractors to implement appropriate additional noise mitigation measures including, but not limited to, changing the location of stationary construction equipment, shutting off idling equipment, rescheduling construction activity, notifying adjacent residents in advance of construction work, and installing acoustic barriers around stationary construction noise sources to comply with local noise control requirements.

- Implementing agencies will implement use of portable barriers during construction of subsurface barriers, debris basins, and storm water drainage facilities.

- No pile-driving or blasting operations will be performed within 3,000 feet of an occupied residence on Sundays, legal holidays, or between the hours of 8:00 p.m. and 8:00 a.m. on other days. Any variance from this condition will be obtained from the individual improvement project proponent and must be approved by the local jurisdiction.

- Wherever possible, sonic or vibratory pile drivers will be used instead of impact pile drivers, (sonic pile drivers are only effective in some soils). If sonic or vibratory pile drivers are not feasible, acoustical enclosures will be provided as necessary to ensure that pile-driving noise does not exceed speech interference criterion at the closest sensitive receptor.

- In residential areas, pile driving will be limited to daytime working hours.
- Engine and pneumatic exhaust controls on pile drivers will be required as necessary to ensure that exhaust noise from pile driver engines are minimized to the extent feasible.
- Where feasible, pile holes will be pre-drilled to reduce potential noise and vibration impacts.

Significance After Mitigation

It is anticipated that implementation of the Project could potentially result in significant noise impacts; therefore, this impact would be considered significant and unavoidable.

Impact 3.11.2

Noise-sensitive land uses could be exposed to noise in excess of normally acceptable noise levels and/or could experience substantial increases in noise as a result of the operation of expanded or new transportation facilities (i.e., increased traffic resulting from new highways, addition of highway lanes, roadways, ramps, and new transit facilities as well as increased use of existing transit facilities, etc.).

At the regional scale, the noise impacts of new highways, highway widening, new HOV lanes, new transit corridors, and increased frequency along existing transit corridors are generally expected to exceed the significance criteria when they occur near sensitive receptors. Arterials, transportation demand management projects, operations and maintenance projects, grade crossings, ramp and interchange improvements, county-wide bus route expansions, and transit facility improvements are not specifically considered here because noise impacts already occur in the vicinity of these facilities, and determining increases in noise requires greater precision of information.

Mitigation Measures

- As part of the appropriate environmental review of each project, a project specific noise evaluation shall be conducted and appropriate mitigation identified and implemented.
- Project implementation agencies shall employ, where their jurisdictional authority permits, land use planning measures, such as zoning, restrictions on development, site design, and use of buffers to ensure that future development is compatible with adjacent transportation facilities.
- Project implementation agencies shall, to the extent feasible and practicable, maximize the distance between noise-sensitive land uses and new roadway lanes, roadways, rail lines, transit centers, park-and-ride lots, and other new noise generating facilities.
- Project implementation agencies shall construct sound reducing barriers between noise sources and noise-sensitive land uses. Sound barriers can be in the form of earth-berms or soundwalls. Constructing roadways so as appropriate and feasible that they are depressed below-grade of the existing sensitive land uses also creates an effective barrier between the roadway and sensitive receptors.
- Project implementation agencies shall, to the extent feasible and practicable, improve the acoustical insulation of dwelling units where setbacks and sound barriers do not sufficiently reduce noise.
- The project implementation agencies shall implement, to the extent feasible and practicable, speed limits and limits on hours of operation of rail and transit systems, where such limits may reduce noise impacts.
- Passenger stations, central maintenance facilities, decentralized maintenance facilities, and electric substations should be located away from sensitive receptors.

Significance After Mitigation

Although mitigation measures are implemented for the impact, it may not reduce noise levels to below regulatory levels in all circumstances. This impact would remain significant.

Cumulative Impact 3.11.3

Cumulative ambient noise levels could increase in the region to exceed normally acceptable noise levels or have substantial increases in noise as a result of the operation of expanded or new transportation facilities (i.e., increased traffic resulting from new highways, addition of highway lanes, roadways, ramps, and new use of new transit facilities as well as increased use of existing transit facilities, etc.).

The projects included in the 2011 RTP could have a significant impact on noise in the region. As described under Impact 3.11.1, many of the projects involve construction which would result in significant short term impacts. While the construction noise is temporary and short term at the project level, the cumulative construction noise region wide could be significant. Over the course of the planning horizon there is likely to be constant construction within the region.

Cumulative transportation noise could also increase. This ambient noise increase could be related to aircraft overflights, railroads, as well as freeway, arterial and transit noise.

Mitigation Measures

Mitigation measures intended to reduce the noise impacts on sensitive receptors are part of the 2011 RTP. These include: site design, buffers, soundwalls, etc.

Further reduction in noise impacts would be obtained through the implementation of the measures described in 3.11.1 and 3.11.2.

Significance After Mitigation

Mitigation measures 3.11.1 and 3.11.2 may not reduce noise levels to below regulatory levels in all cases. Therefore, the impact would be significant.

3.12 POPULATION, HOUSING & EMPLOYMENT

This section provides information about population, housing, and employment in the Kern region. CEQA defines population impacts to include changes to the location, distribution, density, or growth rate of the human population, while housing impacts relate to alterations in existing housing or the creation of demand for additional housing. The environmental setting and methodology used to evaluate the potential impacts of projects associated with implementation of the Project are described. The criteria used to evaluate the significance of those impacts, potential impacts resulting from those projects, and mitigation measures are discussed.

Regulatory Setting

Location of population, housing and employment follow land use regulations, see Section 3.10

Environmental Setting

New Patterns of Development and Travel

The Kern region has evolved into a different kind of place since the 1970s, when downtown Bakersfield was by far the largest job center. Today, north, west, and southwest Bakersfield and other employment centers have developed to where they have as many or more jobs as downtown Bakersfield. The trend of multiple job centers seems secure, given that the region has enough unused land already zoned for employment to serve triple the current population, or to last thirty years or more at present growth rates.

Housing, jobs, shopping, and recreational opportunities tend to develop in separate locations. Offices seek proximity, for ease of interaction. Manufacturing and warehousing seek separation from residential neighborhoods, to reduce impacts. Big-box stores tend to locate on large parcels at the urban edge. New housing is being built around the urban edge and in many of the smaller cities near or adjacent to Bakersfield or the SR 99 corridor. As a result of the separated development of jobs and housing, the urban area has grown in a way that forces people to travel from one area to another.

Population and Employment Estimates and Projections

Every two to three years, Kern COG updates its growth forecasts for housing, population, and employment. The current set of Kern COG population and employment projections for the Kern County are provided in Tables 3-14 and 3-15. Population, housing and employment estimates/projections are provided for Years 1980 through 2035. The projections reflect a consensus of local government agencies on anticipated development of the region over the next 25-year period. The projections are used for transportation and air quality planning purposes, particularly for the development of the RTP.

Leading Growth Areas

The projections indicate that population in the Kern region is expected to grow by 475.400 people, an increase of almost 56 percent, between 2010 and 2035. Total population in the Kern region in 2035 is projected to be 1.32 million. Total employment is expected to be 460,730 within the Kern County Regional Statistical Areas (RSAs).

TABLE 3-14
Historical and Forecast Population and Housing Estimates/Projections

								1980-2010 Historic Growth		2010-2035 Forecast Growth	
	Census	Census	Census	Forecast	Forecast	Forecast	Forecast	Average Annual		Average Annual	
Year	**1980**	**1990**	**2000**	**2010**	**2020**	**2030**	**2035**	**Rate**	**Increase**	**Rate**	**Increase**
Kern County											
Population	403,089	543,477	661,653	845,600	1,010,800	1,208,200	1,321,000	2.4%	14,750	1.8%	19,016
Households	139,881	181,480	208,655	271,327	319,200	381,600	417,200	2.2%	4,382	1.7%	5,835
Metro Bakersfield											
Population	228,000	329,100	409,800	533,461	640,536	764,941	848,487	2.8%	10,182	1.8%	12,601
Households	89,500	120,000	134,100	172,970	203,753	244,722	269,840	2.2%	2,782	1.8%	3,875
Arvin											
Population	6,863	9,286	12,956	17,100	22,800	29,100	33,400	3.0%	341	2.6%	652
Households	1,946	2,385	3,010	3,800	5,000	6,300	7,100	2.2%	62	2.5%	132
Bakersfield											
Population	105,611	174,820	246,899	341,700	437,800	541,600	609,600	3.8%	7,870	2.3%	10,716
Households	39,602	62,516	83,445	111,900	141,300	172,600	192,900	3.4%	2,410	2.2%	3,240
California City											
Population	2,743	5,955	8,385	15,300	20,600	26,700	30,700	5.6%	419	2.7%	616
Households	990	2,119	3,067	4,500	5,900	7,400	8,400	4.9%	117	2.5%	156
Delano											
Population	16,491	22,762	39,499	55,100	68,000	81,400	90,000	3.9%	1,287	1.9%	1,396
Households	4,912	6,236	8,411	10,600	12,900	15,200	16,700	2.5%	190	1.8%	244
Maricopa											
Population	946	1,193	1,111	1,150	1,250	1,340	1,400	0.6%	7	0.8%	10
Households	338	416	404	410	430	440	450	0.6%	2	0.4%	2
McFarland											
Population	5,151	7,005	9,835	13,800	17,000	20,400	22,500	3.2%	288	1.9%	348
Households	1,399	1,685	1,989	2,800	3,600	4,500	5,100	2.3%	47	2.4%	92
Ridgecrest											
Population	15,929	28,295	24,927	28,700	32,900	37,000	39,400	1.9%	426	1.3%	428
Households	5,762	10,349	9,826	11,100	12,600	14,000	14,900	2.2%	178	1.2%	152
Shafter											
Population	7,010	8,409	12,731	16,300	22,700	30,300	35,500	2.8%	310	3.1%	768
Households	2,284	2,558	3,292	4,200	6,300	8,900	10,800	2.0%	64	3.7%	264
Taft											
Population	5,316	5,902	8,811	9,300	11,600	14,000	15,500	1.8%	133	2.0%	248
Households	2,096	2,209	2,233	2,300	3,000	3,800	4,300	0.3%	7	2.5%	80
Tehachapi											
Population	4,126	5,791	11,125	14,000	18,200	22,800	25,800	4.0%	329	2.4%	472
Households	1,534	2,335	2,533	3,300	4,200	5,300	5,900	2.5%	59	2.3%	104
Wasco											
Population	9,613	12,412	21,263	26,000	33,100	40,700	45,700	3.3%	546	2.2%	788
Households	3,001	3,471	3,971	5,000	6,700	8,500	9,800	1.7%	67	2.7%	192
Unincorporated											
Population	223,290	261,647	264,111	307,150	324,850	362,860	371,500	1.1%	2,795	0.8%	2,574
Households	75,947	85,201	86,474	111,417	117,270	134,660	140,850	1.3%	1,182	0.9%	1,177

Source: Kern COG, March 2010

TABLE 3-15
Kern County
Year 2035 Employment Estimates/Projection
by Regional Statistical Area (RSA)

Regional Statistical Area	Total Employment
Metro Bakersfield - total	262,714
Metro Bakersfield - N.O.R.	83,360
Metro Bakersfield - Southwest	74,432
Metro Bakersfield - Southeast	41,105
Metro Bakersfield - Northeast	24,453
Metro Bakersfield - Central	39,364
Greater Delano/McFarland	30,355
Greater Taft/Maricopa	15,104
Greater Wasco	18,163
Greater Tehachapi	18,923
Greater Shafter	36,180
Greater Arvin	5,712
Greater Rosamond	24,643
Greater Cal City/Mojave	13,087
Greater Ridgecrest	22,617
Greater Frazier Park	7,505
Greater Lake Isabella	5,727
TOTAL KERN COUNTY	460,730

Source: Kern COG, April 2010

Jobs-Housing Ratio

The study of jobs-housing balance continues in urban and urbanizing regions across the country as a land-use strategy with the potential to improve regional air quality and mobility. The premise assumes that land-use policy can create a balanced mix of housing and employment opportunities, which in turn can reduce commuting distances and associated air pollution.

The primary objective for many jurisdictions is to improve mobility by reducing total vehicle miles traveled (VMT), both work and non-work related. Therefore, improving or worsening jobs-housing balance would not result in a beneficial or adverse impact in and of itself, but the resultant effects on mobility, congestion, and air quality may comprise significant secondary impacts. A jurisdiction is considered housing rich if the ratio is less than 1.10 and job rich if the ratio is above 1.30.

Methodology

To identify and evaluate impacts associated with the Project, improvements were reviewed to identify the projects that might affect population or housing. The evaluation of impacts is based on general descriptions of projects

contained in the Project and is regional in nature. The evaluation is not individual improvement project-specific, and is intended to serve as a resource to jurisdictions and Caltrans for conducting site-specific environmental review for specific projects.

Environmental Impacts, Mitigation Measures, and Significance After Mitigation

Criteria For Significance

Four criteria were used to determine significant impacts of the Project on population and the disruption of existing residential or commercial neighborhoods. The Project is considered to have a significant impact if it:

- Contributes to unplanned population or employment growth. Implementation of the Project would have a potentially significant impact if the transportation improvements lead to substantial, unanticipated increases in population beyond those currently projected;
- Contributes to dispersion of population or employment growth. Implementation of the Project would have a potentially significant impact if it would induce substantial growth in areas currently zoned for agriculture or open space at the expense of growth within areas zoned for growth;
- Causes community displacement. Implementation of the Project would have a potentially significant impact if new construction or right-of-way acquisition associated with the Project results in residential or business displacement; and
- Causes community disruption. Implementation of the Project would have a potentially significant impact if it results in permanent alterations to the characteristics and qualities of an existing neighborhood or community, particularly in cases where access to a neighborhood or commercial district is restricted. A significant impact would also result if residences are separated from community facilities and services, or community amenities are lost. Finally, a significant impact would occur if the Project results in temporary disruption to or restriction of access within neighborhoods or commercial areas during construction. It is assumed that most projects have the potential for short-term construction impacts at some level, with the exception of minor operational improvements.

Impact 3.12.1

The Project could affect overall population, housing and employment growth and dispersion in the region from the predicted regional assumptions. Implementation of the proposed mitigation measures is expected to reduce this to a less than significant impact. The Project is a specific set of transportation improvements together with the long-range transportation plan developed to meet, among other goals, the long-term socio-economic conditions of the region. One of the strategic issues is growth. Between the years, 2010 and 2035, residential population is expected to increase by 56 percent. The recent growth trends in housing, population, and jobs within the region are expected to continue.

Given the location of the region, its mild climate and existing population trends, growth in the region is inevitable. The Project provides for the anticipated transportation needs of projected growth. The Project is based on a projected population in the Kern region in 2035 of 1.32 million people and associated employment. The projected population growth is acceptable under state law.

It is not anticipated that the majority of changes to the transportation network included in the Project will significantly change population, employment and household rates of growth or distribution of growth. Transportation is just one factor that can affect growth. Other factors include the cost of housing, the location of jobs, the economy, and the climate. Factors that account for population growth include natural increase and net migration. The average annual birth rate for California is expected to be 20 births per 1,000 population, compared to 10 births per 1,000 population

in West Virginia, the state with the lowest projected birth rate. Additionally, California is expected to attract more than one third of the country's immigrants.

There is some debate as to whether the Project is a response to growth, whether it facilitates growth or in fact induces growth. Infrastructure of any type can be argued to do any one of these. In the case of the Project, the Plans themselves are considered to be, overall, a response to growth; however, individual projects may facilitate or even induce growth. If existing transportation deficiencies are not addressed and future projected travel needs are not accommodated, then some localized areas of the region expected to receive new jobs and/or housing may become undesirable, causing the regional growth total to change or growth to be redistributed.

New or improved transportation facilities provide access to areas of new development, thereby allowing more people and jobs to locate in growth areas. Without these facilities, the lack of access could force development into areas with existing transportation infrastructure, thereby shifting population and employment growth from one area of the region to another. From this standpoint, the inclusion of new or upgraded transportation facilities in the Project could be considered growth inducing in some localities. The lack of new or improved facilities in some areas could also result in increased growth in areas with existing transportation infrastructure, growth that may not have been anticipated in the local general planning process. From this standpoint, the lack of new transportation facilities in the Project could also be considered growth inducing in some other localities.

Major regional capacity-enhancing projects, do have the potential to attract major new growth, and thus could be seen as potentially growth inducing at the regional level. If these projects open up new areas for urban development, particularly through the development of interchanges and new road connections that are in addition to those proposed by the Project, then the dispersion of population, housing and employment growth in the region could differ from that predicted in the regional growth assumptions.

The Project could potentially displace or relocate residences and businesses through acquisition of land and buildings necessary for highway, arterial, and transit improvement. This would be considered a potentially significant impact.

The proposed transportation improvements addressed by the Project could result in significant impacts related to the displacement or relocation of homes and businesses. In some cases, buildings on residential, commercial, and industrial land may have to be removed in order to make way for new or expanded transportation facilities. In other cases, certain transportation improvements could permanently alter the characteristics and qualities of a neighborhood. In any case, the potential for displacement and disruption are major considerations in the final design of individual transportation improvements and are addressed in the design and development of mitigation programs. From the regional perspective, it is assumed that some residential and commercial displacement and disruption will occur.

Many of the improvement projects proposed by the Project that focus on maintaining and operating the existing regional system will occur on existing roadways and will not require the acquisition of land. This is true of most of the proposed carpool lanes, bus lines, transportation demand management projects, intelligent transportation systems, and road maintenance projects and programs. These transportation projects will generally not require the displacement of residences or businesses as the right-of-way has already been acquired.

Other proposed projects, new or expanded highway interchanges, and arterial improvements have the potential to impact residential units and businesses. Depending on the alignments selected, they have the potential to traverse through residential or commercial areas and construction of these projects may require acquisition of new rights-of-way. Depending on the location and scope of these projects, potential impacts could be as major as removal of several homes or businesses or as minor has extending into existing right-of-way.

Mitigation Measures

As part of the appropriate project-specific environmental review, population and job displacement impacts will be evaluated. Mitigation measures will be identified to minimize impacts. Implementation agencies will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with all mitigation measures.

- For projects with the potential to displace homes or businesses, project implementation agencies will evaluate alternate route alignments and transportation facilities that minimize the displacement of homes and businesses. An iterative design and impact analysis would help where impacts to persons or businesses are involved. Potential impacts will be minimized to the extent feasible. If possible, existing rights-of-way should be used.

- Implementation agencies will identify businesses and residences to be displaced. As required by law, relocation and assistance will be provided to displaced residents and businesses, in accordance with the federal Uniform Relocation and Real Property Acquisition Policies Act of 1970 and the State of California Relocation Assistance Act, as well as any applicable City and County policies.

- Implementation agencies will develop a construction schedule that minimizes potential neighborhood deterioration from protracted waiting periods between right-of-way acquisition and construction.

Significance After Mitigation

The impact would remain significant and unavoidable after mitigation due to the potentially large number of displacements that could occur with construction of all the proposed improvement projects.

Impact 3.12.2

The Project has the potential to disrupt or divide a community by separating community facilities, restricting community access and eliminating community amenities. This is a potentially significant impact.

New transportation facilities or expansion of existing facilities could contribute to changes to community character in some areas of the region. The widening of a roadway could be perceived as too great a distance to cross by a pedestrian and thus divide a community. An elevated grade crossing may create a physical barrier in some locations. New transportation corridors may traverse community open space thus eliminating a community amenity. Each of the jurisdictions includes improvements to arterial roadways. Arterial roadways generally serve the local network of streets and provide access to community amenities and public facilities. Changes to these arterial roadways, such as roadway widening that impede pedestrian crossing could create a real or perceived barrier to community amenities such as parks, schools, and other public facilities located across the arterial.

Mitigation Measures

As part of the appropriate project-specific environmental review, community disruption or division will be evaluated. Mitigation measures will be identified to minimize impacts. Implementation agencies will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with all mitigation measures.

- Implementation agencies will design new transportation facilities that protect access to existing community facilities. During the design phase of the individual improvement project, community amenities and facilities should be identified and access to them considered in the design of the individual improvement project.

- Implementation agencies will design roadway improvements, in a manner that minimizes barriers to pedestrians and bicyclists. During the design phase, pedestrian and bicycle routes will be determined that permit easy connections to community facilities nearby in order not to divide the communities.

Significance After Mitigation

The Project proposes improvement programs and projects in the majority of urbanized areas within the region, and as such, the potential to disrupt or divide communities remains a significant unavoidable impact even with mitigation measures.

Cumulative Impact 3.12.3

Growth and development in the County will increase substantially by 2035. The 2011 RTP, by increasing mobility and including transportation measures, influences the pattern of this development. The 2011 RTP's influence on growth contributes to regional cumulatively considerable impacts to population, housing and employment and would change the intensity of land use in some areas.

Mitigation Measures

The mitigation measures listed above for Impacts 3.12.1 and 3.12.2 would be applied as mitigation for this impact. In addition, the following measure would apply.

- Regional planning efforts will be used to build a consensus in the region to support changes in population, housing and employment to accommodate future growth while maintaining the quality of life in the region.

Significance after Mitigation

In order to accommodate the projected population, housing and employment totals assumed for 2035, the region will need to change land uses and increase the intensity of some existing land use. The cumulative impact would remain significant.

3.13 PUBLIC UTILITIES, OTHER UTILITIES & SERVICES SYSTEMS

Even though they often share right-of-way or are built and maintained in easements adjacent to transportation facilities, public utilities in the region are operated and maintained by various agencies separately from the transportation system. Identified in this section are the public utilities, other utilities and services systems that come into contact with, on a regular basis, agencies responsible for transportation system construction and maintenance.

Police protection within the unincorporated areas of the County is provided by the Kern County Sheriff's Department. In addition, a few incorporated cities contract with the County Sheriff to protect their city. Typically, newly incorporated municipalities are assisted by the County Sheriff's department in an effort to serve their citizens by offering an established police force to protect the jurisdiction as it grows. City police departments are found mostly in the older and larger cities within the County. The California Highway Patrol (CHP) service area is located along the State Route (SR) and Interstate highway system that dissects through the Kern region. The CHP cooperates with both County and city police departments when the need arises.

Fire Protection Services

Fire prevention/suppression and emergency services are provided by the County Fire Department to the unincorporated areas of the County as well as those municipalities that contract with the County for fire protection. As is the case with police services, it is more common to find City Fire Departments among older and/or larger municipalities.

Emergency Services

A number of agencies throughout the County provide emergency medical services. Various fire districts have the responsibility of fire suppression, which also often employ paramedics for emergency medical services. For the most part, private companies are contracted for ambulance services.

Gas and Electric

Several gas and electric service purveyors operate in the Kern region including:

- Pacific Gas and Electric (PG&E);
- Southern California Gas (SOCAL Gas); and
- Southern California Edison.

Telephone

Local phone service is provided primarily by Southern Bell Companies (SBC), although a number of independent telephone companies also operate within the County long distance telephone and cellular service is provided by multiple carriers.

Sewer Disposal and Treatment

A number of sanitation districts and wastewater collection and treatment facilities are located throughout the County. Primary treatment refers to the physical chemical treatment of wastewater; secondary treatment involves continuing the process with biological decomposers to rid the effluent of living organisms.

Water Supply and Demand

Regulatory Setting

The regulatory setting describes the federal, state, and local agencies that have jurisdiction over public services and utilities. The regulations pertinent to public services and utilities that each of these agencies enforce are also described.

- Federal Safe Drinking Water Act

  Enacted in 1974 and implemented by the EPA, the Federal Safe Drinking Water Act imposes water quality and infrastructure standards for potable water delivery systems nationwide. The primary standards are health-based thresholds established for numerous toxic substances. Secondary standards are recommended thresholds for taste and mineral content.

- U.S. Environmental Protection Agency (EPA)

  The EPA is responsible for establishment of primary drinking water standards in the Clean Water Act, Section 304. States are required to ensure that potable water retailed to the public meets these standards. Standards for a total of 81 individual constituents have been established under the Safe Drinking Water Act, as amended in 1986. The U.S. EPA may choose to add further constituents in the future. State primary and secondary drinking water standards are promulgated in CCR Title 22 Section 64431-64501. Secondary drinking water standards incorporate non-health risk factors including taste, odor, and appearance.

- California Safe Drinking Water Act

  The California Safe Drinking Water Act was enacted in 1976, the California Safe Drinking Water Act and codified in Title 22 of the California Code of Regulations (CCR). Potable water supply is managed through local agencies and water districts, the State Department of Water Resources (DWR), the Department of Health Services (DHS), the SWRCB, the EPA, and the U.S. Bureau of Reclamation. Water right applications are processed through the SWRCB for properties claiming riparian rights or requesting irrigation water from state or federal distribution facilities. The DWR manages the State Water Project (SWP) and compiles planning information on supply and demand within the state.

Water Recycling Act

The Water Recycling Act was enacted in 1991 and established water recycling as a priority in California. The Act encourages municipal wastewater treatment districts to implement recycling programs to reduce local water demands.

Solid Waste

Regulatory Setting

Federal Regulations

- Clean Water Act (CWA)

  Enacted in 1972, The Clean Air Act is federal legislation to completely revise the pre-existing Water Pollution Control Act. Section 402 of the CWA authorized the U.S. Environmental Protection Agency (EPA) to regulate point source pollutants, particularly municipal sewage and industrial discharges, to waters of the United States through the National Pollution Discharge Elimination System (NPDES) permitting program. In California, the EPA has delegated responsibility for managing the NPDES program to the State Water Resources Control Board (SWRCB) and Regional Water Quality Control Boards (RWQCBs). In addition, to establish a framework for regulating water quality, the CWA authorized a multi-million dollar Clean Water Grant Program, which together with the California Clean Water Bond funding, assisted communities in constructing municipal wastewater treatment facilities.

  These financing measures made higher levels of wastewater treatment possible for both large and small communities throughout California, significantly improving the quality of receiving waters Statewide. Wastewater treatment and water pollution control laws in the State of California are codified in the California Water Code and the California Code of Regulations (CCR) Titles 22 and 23. In 1967, the SWRCB was assigned responsibility for implementing and enforcing water quality regulations by California State Legislature. In 1969, the California Porter-Cologne Water Quality Control Act was passed which introduced major new water pollution control measures and established the nine RWQCBs, as they exist today.

State Regulations

- California Water Code (Section 13240)

  The California Water Code directs to SWRCB and RWQCBs to prepare Water Quality Control Plans (Basin Plans), establishing water quality objectives and beneficial uses for each body of water within the regional boundaries including groundwater basins. NPDES permits are required for wastewater treatment facilities discharging to surface waters of the United States. The permits establish effluent quantity and quality limitations as well as provide monitoring provisions to evaluate compliance. For point source discharges (e.g., wastewater treatment facilities), the RWQCBs prepare specific effluent limitations for constituents of concern such as toxic substances, total suspended solids (TSS), bio-chemical oxygen demand (BOD), and organic compounds. The limitations are based on the Basin Plan objectives and are tailored to the specific receiving waters, allowing some discharges more flexibility with certain constituents due to the ability of the receiving waters to accommodate the effluent without significant impact.

  The RWQCB issues waste discharge requirements (WDRs) for discharges of privately or publicly treated domestic wastewater to locations other than surface water. These WDRs are usually designed to protect beneficial uses of groundwater basins but can be issued to protect surface waters in areas where groundwater is known to infiltrate into surface waters. Many municipal wastewater treatment facilities do not have NPDES permits, but rather are issued WDRs for discharges to surface impoundments and percolation ponds. The RWQCB also issues waste reclamation requirements (WRRs) for treated wastewater used exclusively for reclamation projects such as irrigation and groundwater recharge. Title 22 of the California Code of Regulations lists allowable reclamation uses including landscape irrigation, recreational impoundments, and groundwater recharge.

In addition to federal and state restrictions on wastewater discharges, most incorporated cities in California have adopted local ordinances for wastewater treatment facilities. Local ordinances generally require treatment system designs to be reviewed and approved by the City prior to construction. Larger urban areas with elaborate infrastructure in place would generally prefer new developments to hook into the existing system, rather than construct new discharges. Other communities promote individual septic systems to avoid construction of potentially growth-accommodating treatment facilities. The RWQCBs generally delegate management responsibilities of septic systems to local jurisdictions.

- Resource Conservation and Recovery Act (RCRA)

40 CFR, Part 258 Subtitle D of the Resource Conservation and Recovery Act (RCRA) establishes minimum location standards for siting municipal solid waste landfills. Because California laws and regulations governing the approval of solid waste landfills meet the requirements of Subtitle D, the U.S. Environmental Protection Agency has delegated the enforcement responsibility to the State of California. California laws and regulations governing these facilities are summarized below.

- California Integrated Waste Management Act

As many of the landfills in the state are approaching capacity and the siting of new landfills becomes increasingly difficult, the need for source reduction, recycling, and composting has become readily apparent. In response to this increasing solid waste problem, in September 1989 the state Assembly passed Assembly Bill (AB) 939, known as the California Integrated Waste Management Act. The Act requires every City and County in the state to prepare a Source Reduction and Recycling Element (SRRE) with its Solid Waste Management Plan that identifies how each jurisdiction will meet the mandatory state waste diversion goals of 25 percent by the year 1995 and 50 percent by the year 2000. Senate Bill 2202 mandates that jurisdictions continue 50 percent diversion on and after January 1, 2000. The purpose of AB 939 is to facilitate the reduction, recycling, and re-use of solid waste to the greatest extent possible. Noncompliance with the goals and timelines set forth within AB 939 can be severe, since the bill imposes fines of up to $10,000 per day on cities and counties not meeting these recycling and planning goals.

- California Integrated Waste Management Board (CIWMB)

The CIWMB has numerous responsibilities in implementing the federal and state regulations summarized above. The CIWMB is the state agency responsible for permitting, enforcing and monitoring solid waste landfills, transfer stations, material recovery facilities (MRFs), and composting facilities within California. Permitted facilities are issued Solid Waste Facility Permits (SWFPs) by the CIWMB. The CIWMB also certifies and appoints Local Enforcement Agencies (LEAs), county or city agencies which monitor and enforce compliance with the provisions of SWFPs. The CIWMB is also responsible for monitoring implementation of AB 939 by the cities and counties. In addition to these responsibilities, CIWMB also manages the Recycled-Content

Materials Marketing Program to increase the understanding of and commitment to using specific recycled-content products in road applications, public works projects and landscaping. These products include recycled aggregate, tire-derived aggregate (TDA), rubberized asphalt concrete (RAC), and organic materials. As discussed above AB 939 requires that each County in the state of California prepare a Countywide Integrated Waste Management Plan (CIWMP).

The CIWMP is a countywide planning document that describes the programs to be implemented in unincorporated and incorporated areas of the county that will effectively manage solid waste, and promote and implement the hierarchy of the Integrated Waste Management Act. The CIWMPs consists of a Summary Plan (SP), a Source Reduction and Recycling Element (SRRE), a Household Hazardous Waste Element (HHWE), a Non-Disposal Facility Element (NDFE), and a Countywide Siting Element (CSE).

- Summary Plan (SP)

  A Summary Plan is a solid waste planning document required by Public Resources Code Section 41751, in which counties or regional agencies provide an overview of significant waste management problems faced by the jurisdiction, along with specific steps to be taken, independently and in concert with cities within their boundaries.

- Source Reduction and Recycling Element (SRRE)

  The SRRE consists of the following components: waste characterization, source reduction, recycling, composting, solid waste facility capacity, education and public information, funding, special waste and integration. Each city and county is required to prepare, adopt, and submit to the Board an SRRE, which includes a program for management of solid waste generated within the respective local jurisdiction. The SRREs must include an implementation schedule for the proposed implementation of source reduction, recycling, and composting programs. In addition, the plan identifies the amount of landfill and transformation capacity that will be needed for solid waste which cannot be reduced, recycled, or composted.

- Household Hazardous Waste Element (HHWE)

  Each city and county is required to prepare, adopt and submit to the Board, a HHWE which identifies a program for the safe collection, recycling, treatment, and disposal of hazardous wastes that are generated by households. The HHWE specifies how household hazardous wastes generated by households within the jurisdiction must be collected, treated, and disposed. An adequate HHWE contains the following components: Evaluation of Alternatives, program selection, funding, implementation schedule and education and public information.

- Non-Disposal Facility Element (NDFE)
  Each city and county is required to prepare, adopt and submit to the Board, an NDFE which includes a description of new facilities and expansion of existing facilities, and all solid waste facility expansions (except disposal and transformation facilities) that recover for reuse at least five percent of the total volume. The NDFE are to be consistent with the implementation of a local jurisdiction's SRRE. Each jurisdiction must also describe transfer stations located within and outside of the jurisdiction, which recover less than five percent of the material received.

- Countywide Siting Element (CSE)
  Counties are required to prepare a CSE that describes areas that may be used for developing new disposal facilities. The element also provides an estimate of the total permitted disposal capacity needed for a 15-year period if counties determine that their existing disposal capacity will be exhausted within 15 years or if additional capacity is desired (PRC Sections 41700-41721.5).

Methodology

This public services and utilities analysis evaluates those public services and utilities most likely to be affected by the construction and implementation of the various types of improvement projects.

Potential Environmental Impacts and Recommended Mitigation Measures

Criteria for Significance

The following significance criteria were used to determine potentially significant impacts to public services and utilities resulting from implementation of proposed improvement projects. Significance criteria were developed based on State CEQA guidelines. Public services and utilities would experience significant adverse impacts if improvement projects would:

- Substantially diminish established regional levels of fire and police protection services;
- Create a substantial need within the region for additional fire and police stations, department personnel and/or equipment;
- Result in a major regional reduction or interruption of utility service to consumers;
- Generate a substantial amount of wastewater that exceeds the capacity of the region's available infrastructure to handle and dispose of the wastewater;
- Generate a substantial amount of solid waste that exceeds the capacity of the region's available landfill to handle and dispose of the waste; and/or
- Generate a substantial increase in the amount of potable water demand that exceeds the region's available infrastructure capacity to provide water service.

Impact 3.13.1

Construction and implementation of improvement projects could affect the level of police, fire and medical services in the County. With mitigation, this would be a less than significant impact.

Numerous agencies within multiple jurisdictions in the County provide fire protection, emergency medical services, and police services. Depending upon the timing, location, and duration of construction activities, several of the proposed improvement projects, including arterials, interchanges, and auxiliary lanes could delay emergency response times or otherwise disrupt delivery of emergency services. Emergency routes would be impaired if one or more lanes of a roadway in Kern County were closed off for construction. Traffic delays and prevention of access to calls for service could potentially be caused by the closure of these lanes.

While these impacts would be short-term in nature, they could be potentially significant. Each individual improvement project will be analyzed to determine the degree of impact to emergency services, as part of project-specific environmental review. Adherence to road encroachment permits by the implementing agency could reduce construction-related impacts to emergency vehicle access and response times. As part of the construction mitigation strategy, a traffic control plan should be prepared to further reduce impacts on traffic and emergency response vehicles. Additionally, there is the potential need for increased police, fire, and medical services at the construction sites of projects for safety purposes. The impact of the construction sites themselves on police, fire, and emergency medical services is anticipated to be short-term in nature and less than significant.

The Project includes several types of improvement projects that, upon completion, would require different levels of police, fire, and medical services. Projects involving new roadways are anticipated to require police, fire, and emergency medical services for safety purposes. In many cases, transit-related projects would involve the construction of transit stations. Upon completion, these transit stations would require police, fire, and emergency medical services. In some cases, the governing transit authority provides security. Additionally, the increased use of

transit modes of transportation, such as buses and trains, would involve an increased need for police, fire, and emergency medical services for protection and rescue services.

Rail projects, other than transit stations, are anticipated to require minimal amounts of additional fire, police, and emergency medical services for safety purposes. The improvement of and the use of non-motorized transportation methods, such as bike routes, are anticipated to require minimal amounts of additional police, fire, and emergency medical services. If restrooms or drinking fountains are incorporated into non-motorized transportation projects, these uses would require a minimal amount of police, fire, and emergency medical for security and safety.

Public service and utility providers have historically accommodated increases in demand throughout the County. For the most part, improvement projects would not generate a substantial need for additional police, fire, and emergency medical services, except in the case where new facilities are constructed. Local jurisdictions are expected to be equipped to handle any increased demands for fire and medical services generated by facilities, like transit stations. If any new transit police staff or facility is deemed necessary (by the individual improvement project level CEQA documentation), it will need to be funded by the appropriate transit authority. The total projected demand for each of these types of projects is not anticipated to be significant, based on the demand for public service and utility for similar projects and on the current capacities of existing fire, police, and medical services.

As discussed in the Population and Housing section of this EIR, population in the County will increase significantly over the next 25 years, with or without the Project. In general, Kern COG does not anticipate that the Project will substantially affect population distribution on a regional basis. However, several of the transportation projects in the less developed areas of the region could experience a corresponding increase in demand because of the Project. Depending on the amount of increase in population, the increase in the demand for these services has the potential to be a significant impact in those specific areas. However, any construction resulting from the Project within the County will be subject to further environmental review. With the following mitigation measures, this impact would be reduced to a level of insignificance.

Mitigation Measures

As part of individual improvement project-specific environmental review, implementation agencies will evaluate the impacts on police, fire, and medical services in the County. Appropriate mitigation measures should be identified for all impacts. The implementation of projects by agencies or local jurisdiction will be responsible for ensuring adherence to the mitigation measures. Kern COG will be provided with documentation indicating compliance with mitigation measures.

- Prior to construction, the implementation agency will ensure that all necessary local and state road and railroad encroachment permits are obtained. The implementation agency also will comply with all applicable conditions of approval. As deemed necessary by the governing jurisdiction, the road encroachment permits may require the contractor to prepare a traffic control plan in accordance with professional engineering standards prior to construction. Traffic control plans should include the following requirements:

  - Identify all roadway locations where special construction techniques (e.g., directional drilling or night construction) would be used to minimize impacts to traffic flow;
  - Develop circulation and detour plans to minimize impacts to local street circulation. This may include the use of signing and flagging to guide vehicles through and/or around the construction zone;
  - Schedule truck trips outside of peak morning and evening commute hours;
  - Limit lane closures during peak hours to the extent possible;
  - Use haul routes, minimizing truck traffic on local roadways, to the extent possible;
  - Include detours for bicycles and pedestrians in all areas potentially affected by individual improvement project construction;

- Install traffic control devices as specified in the California Department of Transportation Manual of Traffic Controls for Construction and Maintenance Work Zones;
- Develop and implement access plans for highly sensitive land uses such as police and fire stations, transit stations, hospitals, and schools. Access plans will be developed with the facility owner or administrator. To minimize disruption of emergency vehicle access, affected jurisdictions will be asked to identify detours for emergency vehicles, which will then be posted by the contractor. The facility owner or operator will be notified in advance of the timing, location, and duration of construction activities and the locations of detours and lane closures;
- Store construction materials only in designated areas; and
- Coordinate with local transit agencies for temporary relocation of routes or bus stops in work zones, as necessary.

- Projects requiring police protection, fire service, and emergency medical service will coordinate with the local fire department and police department to ensure that the existing public services and utilities will be able to handle the increase in demand for their services. If the current levels of service at the individual improvement project site are found to be inadequate, infrastructure improvements and personnel requirements for the appropriate public service will be identified in each individual improvement project's CEQA documentation.

- The growth inducing potential of individual projects will be carefully evaluated so that the full implications of the individual improvement project are understood. Individual environmental documents will quantify indirect impacts (growth that could be facilitated or induced) on public services and utilities. Lead and responsible agencies should then make any necessary adjustments to the applicable General Plan.

Significance After Mitigation

Implementation and monitoring of the above mitigation measures will provide the framework and direction for subsequent individual improvement project-specific mitigation designed to avoid or reduce the identified significant Project impacts to a less than significant level.

Impact 3.13.2

Demand for solid waste, wastewater, and potable water services in the County could be affected by construction and implementation of the projects. This would be a less than significant impact with mitigation.

Several of the projects have the potential to generate a significant amount of solid waste during construction through grading and excavation activities. Any increases in demand for wastewater and potable water services resulting from an individual improvement project are expected to be minimal during construction. Construction debris would be recycled or transported to the nearest landfill site and disposed of appropriately. Currently, several landfills in the region function at or below their permitted capacity. Therefore, the projects proposed are not anticipated to generate a significant impact on solid waste facilities during construction. Nevertheless, the amount of debris generated during individual improvement project construction would need to be evaluated prior to construction on an individual improvement project-by-project basis.

It is assumed that, upon completion, projects will require additional public services and utilities to handle increased demand for wastewater and solid waste services, increased demand for potable water, and, in some cases, increased demand for reclaimed water for landscaping purposes. These increases would need to be evaluated on a project-by-project basis. Projects involving roadway construction are anticipated to require potable or reclaimed water for landscaping purposes. These increases would need to be evaluated on a project-by-project basis.

Transit-related projects would involve the construction of transit stations in many cases. Incremental amounts of potable water would be generated at these transit stations for restrooms, public drinking water, and landscaping. Additionally, a minimal increase in the demand for potable water, wastewater service, and solid waste collection would be created by increased use of transit methods, such as buses and trains.

With the exception of transit-related rail, unless rail projects involve the construction of additional railways or facilities, they are not anticipated to require additional wastewater, solid waste, or potable water service. The improvement of and increased usage of non-motorized transportation methods, like bike routes, are not anticipated to require additional levels of solid waste, waste water, and potable water service, other than drinking fountains. If restrooms are incorporated into non-motorized transportation projects, these uses would also require minimal amounts of solid waste (for trash receptacles), wastewater (for toilets, water fountains, and faucets), and potable water (for faucets, drinking fountains, and landscaping) services.

Public service and utility providers have accounted for increases in the public needs throughout the County. In most cases, wastewater and potable water infrastructures function well below their capacities. In addition, solid waste facilities, including transfer stations and landfills, commonly accept levels of solid waste well below their maximum capacities. Based on the demand for public services and utilities for similar projects, and on the current capacities of existing public services and utilities, the local projected demand for each of these types of projects is not anticipated to be significant but will need to be analyzed on a project-by-project basis.

Mitigation Measures

As part of individual improvement project-specific environmental review, implementation agencies will evaluate the impacts on demand for solid waste, wastewater, and potable water services in the County. Appropriate mitigation measures should be identified for all impacts. The implementation agencies or local jurisdiction will be responsible for ensuring adherence to the mitigation measures. Kern COG will be provided with documentation indicating compliance to mitigation measures.

- Projects requiring wastewater service, solid waste collection, or potable water service will coordinate with the local public works department to ensure that the existing public services and utilities would be able to handle the increase. If the current infrastructure servicing the individual improvement project site is found to be inadequate, infrastructure improvements for the appropriate public service utility will be identified in each individual improvement project's CEQA documentation.

- Reclaimed water will be used for landscaping purposes instead of potable water wherever feasible.

- Each of the proposed projects will comply with applicable regulations related to solid waste disposal.

- The construction contractor will work with the County Recycling Coordinator to ensure that source reduction techniques and recycling measures are incorporated into individual improvement project construction.

- The amount of solid waste generated during construction will be estimated prior to construction, and appropriate disposal sites will be identified and utilized.

Significance After Mitigation

Implementation and monitoring of the above mitigation measures will provide the framework and direction for subsequent improvement project-specific mitigation designed to avoid or reduce the identified significant Project impacts to a less than significant level.

Impact 3.13.3

The transportation of construction materials to and from the sites during individual improvement project construction could cause accumulation of soil on roadways surrounding the construction sites. This would be a less than significant impact with mitigation.

Hauling trucks could track soil from the construction site onto adjacent streets during construction of projects, particularly those involving excavation. Since street cleaning activities typically occur only once a month in a particular area, increased soil on local streets would increase the demand for street cleaning. The incorporation of the following mitigation measure would reduce this impact to a level less than significant.

Mitigation Measures

As part of individual improvement project environmental review, individual agencies will evaluate the impacts resulting from soil accumulation during construction of the projects. Appropriate mitigation measures will be identified for all impacts. The implementation agencies or local jurisdiction will be responsible for ensuring adherence to the mitigation measures. Kern COG will be provided with documentation indicating compliance with mitigation measures.

Implement appropriate measures, such as the washing of construction vehicles undercarriages before leaving the construction site or increasing the use of street cleaning machines, to reduce the amount of soil on local roadways as a result of construction.

Significance After Mitigation

Implementation and monitoring of the above mitigation measures will provide the framework and direction for subsequent project-specific mitigation designed to avoid or reduce the identified significant Project impacts to a less than significant level.

Impact 3.13.4

It is possible that underground utility lines (sewer, gas, electricity, telephone and water) could be uncovered and potentially severed because of construction of projects. This would be considered a less than significant impact with mitigation.

The potential to encounter underground utility lines, and potentially sever those lines, is a possibility with any groundbreaking in the Kern region. However, prior to construction, the individual improvement project implementation agency would be required to incorporate the locations of existing utility lines into the construction schedule. Prior knowledge and avoidance of existing utility lines during construction would reduce this impact to a level less than significant.

Mitigation Measures

- As part of individual improvement project environmental review, implementation agencies will evaluate the impacts resulting from the potential for severing underground utility lines during construction of the projects. Appropriate mitigation measures will be identified for all impacts. The implementation agencies or local jurisdiction will be responsible for ensuring adherence to mitigation measures. Kern COG will be provided with documentation indicating compliance with mitigation measures.

- Prior to construction, the implementing agency or contractor will identify the locations of existing utility lines. All known utility lines will be avoided during construction.

Significance After Mitigation

Implementation and monitoring of the above mitigation measures will provide the framework and direction for subsequent individual improvement project-specific mitigation designed to avoid or reduce the identified significant Project impacts to a less than significant level.

Cumulative Impact 3.13.5

Growth and development in the County will increase substantially by 2035. The 2011 RTP, by increasing mobility and including transportation measures, influences the pattern of this development. The 2011 RTP's influence on growth contributes to regional cumulatively considerable impacts to police and fire and emergency services, solid waste services, and other public services in the County.

Growth and development in the region will require additional police, fire, and other emergency and public services, and additional solid waste services. Such needs will be determined on a project-level basis by individual service providers.

Mitigation Measures

- The growth inducing potential of individual projects shall be carefully evaluated so that the full implications of the projects are understood. Individual environmental documents shall quantify indirect impacts (growth that could be facilitated or induced) on public services and utilities to the extent feasible.
- The California Integrated Waste Management Board shall continue to enforce solid waste diversion mandates that are enacted by the Legislature.
- Local jurisdictions shall continue to adopt programs to comply with state solid waste diversion rate mandates and, where possible, shall encourage further recycling to exceed these rates.
- Local jurisdictions shall implement or expand city or county-wide recycling and composting programs for residents and businesses. This could include extending the types of recycling services offered (e.g., to include food and green waste recycling) and providing public education and publicity about recycling services.
- Project implementation agencies shall coordinate regional approaches and strategic siting of waste management facilities.
- Project implementation agencies shall prioritize siting of new solid waste management facilities including recycling, composting, and conversion technology facilities in conjunction with existing waste management or material recovery facilities.
- Project implementation agencies shall increase programs to educate the public and increase awareness of reuse, recycling, composting, and green building benefits and raise consumer education issues at the county and city level, as well as at local school districts and education facilities.

Significance After Mitigation

The cumulative impacts of providing additional public services would remain significant.

3.14 TRANSPORTATION/TRAFFIC

Implementation of the Project will result in improvements to existing regional transportation and circulation systems. Proposed improvements are intended to fulfill required regional transportation needs. Proposed street and highway programs are aimed at reducing existing traffic and other transportation/circulation conflicts and resulting accident hazards. Implementation of planned improvements to the street and highway network, improvement of County airports, provision of mass transportation services and facilities, identification of additional bikeways and pedestrian improvements, and improved transportation systems that accommodate goods movement will have beneficial effects on a region wide basis.

Regulatory

Federal Regulations

- National Environmental Policy Act (NEPA)

  The National Environmental Policy Act (NEPA) provides general information on effects of federally funded projects. The act was implemented by regulations included in the Code of Federal Regulations (40CFR6). The code requires careful consideration concerning environmental impacts of federal actions or plans, including projects that receive federal funds. The regulations address impacts on land uses and conflicts with state, regional, or local plans and policies, among others. They also require that projects requiring NEPA review seek to avoid or minimize adverse effects of proposed actions, and also to restore and enhance environmental quality as much as possible.

- Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)

  In 2005, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) was signed into law. The Act provides guaranteed funding for highways, highway safety, and public transportation totaling $244.1 billion, representing the largest surface transportation investment ever. The Act follows two bills that highlighted surface transportation funding needs—the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and the Transportation Equity Act for the 21st Century (TEA-21), which shaped the highway program to meet changing transportation needs throughout the nation. SAFETEA-LU addresses challenges such as improving safety, reducing traffic congestion, improving efficiency in freight movement, increasing intermodal connectivity, and protecting the environment. SAFETEA-LU also gives state and local transportation agencies more flexibility to solve transportation problems. SAFETEA-LU expired at the end of September 2009 but Congress extended the legislation.

State Regulations

- California Environmental Quality Act (CEQA)

  CEQA defines a significant impact on the environment as a substantial, or potentially substantial, adverse change in the physical conditions within the area affected by the project. Land use is a required impact assessment category under CEQA. CEQA documents generally evaluate land use in terms of compatibility with the existing land uses and consistency with local general plans and other local land use controls (zoning, specific plans, etc).

Environmental Setting

The existing conditions section for the transportation and circulation systems within the Kern region have been broken down into six subsections, and are described in greater detail below.

Multi-modal Transportation System

The planned transportation/circulation system provides the basic network used for the movement of goods and people in the region. Regional streets and highways are used by nearly all travel modes including automobiles, ridesharing vehicles, public and common carrier transit, the intra- and inter-regional trucking industry, bicyclists, pedestrians, and other non-motorized modes of transportation. These systems must operate efficiently in order to reduce traffic congestion, improve air quality, and move people and goods safely.

The 2011 RTP systems are composed of the regional streets and roads that include federal interstate and State highways, regional arterials, and other regional street and road facilities. The RTP also addresses future transportation/circulation systems needs, including mass transportation, aviation, non-motorized, and goods movement. A list of planned improvement projects along each of these systems is provided in the RTP and the list of improvement projects and programs contained in the RTP are provided in Section 2 of this EIR. These planned projects are considered to be "financially constrained"; therefore, the likelihood for implementation over the next twenty-five (25) years is assumed. The impact analysis of each mode on the planned transportation/circulation system is provided below. The analysis was developed with the assumption that only financially constrained projects would be implemented during the life of the Project.

According to Kern COG, a number of on-going studies will affect the regionally system as it evolves over the next twenty-five (25) years. Specifically, Kern COG is continuing its studies regarding the possibility of raising the fees levied on new development to maintain the transportation infrastructure. Continued funding shortfalls are highlighting the need to investigate all possible revenue sources. Transportation impact fee (TIF) programs are already in place within Kern County. The Metropolitan Bakersfield fee has been raised several times since its inception. A recent revision to the ordinance created a core area with a fee that is half the normal rate, the intent of which is to encourage infill development. Traffic impact fees are one-time costs added to the price of a new home or business to help address transportation infrastructure needs created as new residents move into a city or community

The sprawling pattern commonly associated with California transportation networks provides fewer modal options to commuters. Multimodal efforts in Kern County are focused on enhancing existing conditions and creating environmentally favorable patterns of travel. Based upon information provided in the 2011 RTP, transportation planning has relied heavily in the past upon the analysis of separate and discrete transportation modes. However, as the County tries to deal with congestion and the problems of air pollution, there is a growing awareness that solutions must be evaluated within the context of an integrated system, rather than by individual mode only. This systematic look at the County's capabilities encourages analysis and planning, which look at transportation systems that can be brought to the resolution of a need for travel or movement of goods. This approach is helped by looking at the characteristics of our County, which may affect travel demands, including but not limited to those, which follow:

- Bakersfield is the major population center for the Valley;
- Kern County contains portions of the Sequoia National Forest and a small portion of the Padres National Forest;
- Route 178 northeast out of Bakersfield is the primary corridor to the Kern River Valley, which is traversed by the Kern River, one of the most scenic and wild rivers in California;
- As one of the largest producers of farm commodities in the world, Kern County has a strong "farm to market" travel demand affecting local roads and the state highway system. Movement of goods occurs throughout the County, as farm and other commodities are brought to market and to interregional routes;

- The County is crossed by two north-south corridors, Freeway 99 and Interstate 5. In addition, a major east-west corridor (Route 58) provides regional access between Kern County and the State of Nevada and Los Angeles and Riverside County to the east. Each of them is key to the statewide network;
- Recreational trips are served by several state highways: Routes 14, 46, 99, 155, 178, Highway 395, and I-5;
- Kern County is served by Amtrak, which has experienced increasing ridership, even though continuous rail service to northern California is limited and to southern California is yet to be developed;
- While the distances between destinations and generally low densities have encouraged automobile usage, there is a large rural and urban population in need of public transit service;
- The systems that are in place are in need of more stable financing;
- Meadows Field provides a hub airport service to its service area;
- The climate and terrain are compatible with the use of cycling for short commutes and recreational trips; and
- Existing rail lines offer potential for an expanding share of commodity movement.

Achievement of some ultimate state of multimodal transportation service would be a system in which a traveler could make a "seamless" journey, with connections between modes, taking minimum effort and involving little delay. Currently, such an ideal state can be reached only in the country's largest and most advanced cities. In these areas, land use densities and developed systems of commuter rail lines, subways, transit buses, trolleys, airport shuttles, and taxis offer a variety of choice and scheduling flexibility that make travel times and accessibility reliable. In these areas, one can walk to the subway line, travel on the subway, resurface to a waiting bus, travel to a commuter train or airport terminal complete with shuttle, and so on.

This trip has been likened to the multi-modalism of our mail system. In the Kern region, where cities have received much of their growth since the invention of the automobile, residential densities tend to be comparatively low, with streets and land uses designed to facilitate the use and storage of the personal automobile. During the hot summer days when upper temperatures can remain around the 100-degree mark, the attractiveness of the air-conditioned car is strong. It will require even stronger commitment to the goals of air quality and the quality of life in this County to make the changes needed to implement the "seamless" multimodal system. It involves people making conscious choices to use alternative transportation modes, and the provision of those alternate systems in a manner, which encourages their use. To succeed, those efforts would have to focus on long-term changes:

TABLE 3-16
County Characteristics

Increasing land use intensity and residential densities, particularly along corridors used for transit or planned for future light rail systems
Facilitating the development of mixed land use districts which promote living, working, shopping and recreation accessible by foot or bicycle, and which are served by centrally located transit routes
Expanding transit systems and the frequency of services
Developing connecting bikeway systems and facilitating and encouraging their use
Improving connectivity between transit and rail, transit and air travel, cycling and transit, etc.
Reservation of future "park and ride" opportunities
An organized public education effort
Appropriate financing, including both operations and capital investment

Highways, Streets and Roads

- Regionally Significant Road System

Kern County's Regionally Significant Roads System is served by one Interstate, one U.S. Highway, and 15 State Routes. Interstate 5 and State Route 99 are major routes that generally run in a north-south direction. State Routes 14, 33, 41 (small segment), 43, 65, and 184, and U.S. Highway 395 also provide north-south access, while Routes 46, 58, 119, 155, 178, 166, 202, 204, 223, run in an east-west direction. In addition, many city and County roads are used for commute, agricultural, recreational and scenic purposes. With urbanization taking place in the County, commuter and business trips are increasing.

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

Streets and highways relevant to this element are the state and interstate highways in the County. These projects are federally funded and/or considered "regionally significant". This Project also recognizes principal arterials as important to the movement of goods and people in the region. Interstate and U.S. Highways in Kern County relevant to the 2011 Plan include I-5 and US 395. State Routes relevant to the RTP include 14, 33, 41 (small segment), 43, 46, 58, 65, 99, 119, 155, 166, 178, 184, 202, 204, and 223. Figure 2-2 in Section 2 of this EIR illustrates the regionally significant streets and highways system. It includes interstate and state highway routes as well as some of the major arterials and regionally significant roadways. "Regionally significant" is defined as a facility with an arterial or higher functional classification, and any other facility that serves regional travel needs including local roads (such as access to and from areas outside of the Kern region; to major activity centers in the region; or to transportation terminals) and normally would be included in the travel demand model.

Kern COG, in conjunction with its member agencies and Caltrans, has developed the "Regionally Significant Road System" for transportation modeling purposes based on the Federal Highways Administration (FHWA) Functional Classifications System of Streets and Highways. In general, the classification systems used by local agencies coincide with the FHWA Functional Classification System; however, when it comes to design standards or geometrics of a particular street or road within a local jurisdiction, each of the local agencies has their own specific design criteria.

There is a significant distinction between the Regionally Significant Roads System and the Countywide Network. Regionally significant projects are statutorily required to be treated separately for air quality reasons.

- Functional Classification System

Functional classification is the process by which streets and highways are grouped into classes, or systems, according to the type of service they are intended to provide. Fundamental to this process is the recognition that individual streets and roads do not serve travel independently in any major way. Rather, most travel involves movement through a network of roads. It becomes necessary to determine how this travel can be channelized within the network in a logical and efficient manner. Functional classifications define the channelization process by defining the area that a particular road or street should service through a highway network. Table 3-17 defines the functional classes in urban areas and Table 3-18 defines functional classes in rural areas.

TABLE 3-17
Urban Functional Classification System-Definitions

Classification	Primary Function	Direct Land Access	Speed Limit	Parking
Fwy/Exprwy	Traffic Movement	None	45-65	Prohibited
Primary Arterial	Traffic Movement/ Land Access	Limited	35-45	Prohibited
Secondary Arterial	Traffic Movement/ Land Access	Restricted	30-35	Generally Prohibited
Collector	Distribute Traffic Between Local Streets & Arterials	Safety Controls, Limited Regulation	25-30	Limited
Local	Land Access	Safety Controls Only	25	Permitted

TABLE 3-18
Rural Functional Classification System-Definitions

Classification	Primary Function	Direct Land Access*	Speed Limit**	Parking***
Fwy/Exprwy	Traffic Movement	Safety Controls	55-70	Prohibited
Arterial	Traffic Movement/ Land Access	Safety Controls	55	Permitted
Collector	Distribute Traffic Between Local Streets & Arterials	Safety Controls	55	Permitted
Local	Land Access	Safety Controls	55	Permitted

*Access to arterials is generally limited or restricted if it provides access to a land subdivision or an industrial, commercial or multi-family use. Access is granted on a controlled basis to parcels fronting on expressways where there is not a frontage road or access to another road.
** All County roads have a 55 mph operating speed unless otherwise indicated.
*** Parking is permitted on all County roads unless otherwise indicated.

Level of Service (LOS) Analysis

Level of Service (LOS) Standards are used by the Kern COG to quantitatively assess the Regionally Significant System's performance. To determine the type and number of transportation projects that may be necessary to accommodate Kern County's expected growth, the level of service (LOS) was assessed along the existing Regionally Significant Roads System.

According to the Highway Capacity Manual (HCM), LOS is categorized by two parameters of traffic, uninterrupted and interrupted flow. Uninterrupted flow facilities do not have fixed elements such as traffic signals that cause interruptions in traffic flow. Interrupted flow facilities have fixed elements that cause an interruption in the flow of traffic such as stop signs, signalized intersections, and arterial roads[6]. Table 3-19 provides a definition of segment LOS.

The goal is to maintain acceptable levels of service along the highways, streets, and roads network. For purposes of this environmental analysis, a minimum LOS of "D" is assumed along the Regionally Significant Roads System consistent with most local General Plan Circulation Elements. Existing levels of service are provided in Chapter 4 of the 2011 RTP.

TABLE 3-19
Segment Level of Service Definitions (2005 Highway Capacity Manual)

Level of Service	Definition
A	Represents free flow. Individual vehicles are virtually unaffected by the presence of others in the traffic stream.
B	Is in the range of stable flow, but the presence of other vehicles in the traffic stream begins to be noticeable. Freedom to select desired speeds is relatively unaffected, but there is a slight decline in the freedom to maneuver.
C	Is in the range of stable flow, but marks the beginning of the range of flow in which the operation of individual vehicles becomes significantly affected by interactions with other vehicles in the traffic stream.
D	Is a crowded segment of roadway with a large number of vehicles restricting mobility and a stable flow. Speed and freedom to maneuver are severely restricted, and the driver experiences a generally poor level of comfort and convenience.
E	Represents operating conditions at or near the level capacity. All speeds are reduced to a low, but relatively uniform value. Small increases in flow will cause breakdowns in traffic movement.
F	Is used to define forced or breakdown flow (stop-and-go gridlock). This condition exists when the amount of traffic approaches a point that exceeds the amount that can travel to a destination. Operations within the queues are characterized by stop and go waves, and they are extremely unstable.

6 Transportation Research Board, 2005

Mass Transportation Existing Conditions

Existing mass transportation services in Kern County consist of both public transit and AMTRAK rail passenger service. Transit services include inter-city, fixed-route, and demand-responsive operations. Common carriers within Kern County include AMTRAK, Greyhound, Orange Belt Stage Lines, and others. Rail passenger services are depicted in Figure 3-15.

Within Kern County, existing public transportation services include public transit, Amtrak, and other private carriers such as Greyhound. Local and regional public transit is available within and between sixteen Kern County communities Current GET annual ridership (under Bus System Improvements) is approximately 7.3 million. Transit services throughout the remainder of the County include intercity, intracity, demand responsive and fixed route operations.

The County of Kern operates Kern Regional Transit that provides service to the unincorporated communities of Buttonwillow, Lamont, Kern River Valley, Frazier Park, Rosamond and Mojave. In addition, the County has agreements with several small cities to share the cost of providing transit service to county areas surrounding incorporated places, i.e., Delano, Ridgecrest, Shafter, Taft, Tehachapi and Wasco. Kern Regional Transit also provides intercity service between Lamont/Bakersfield; Lake Isabella/Bakersfield; Frazier Park/Bakersfield; and California City/ Mojave/ Rosamond/ Lancaster/Palmdale.

Golden Empire Transit (GET) has provided public transit service for the metropolitan Bakersfield area since 1973. Today, GET operates 20 routes with a maximum of 70 buses in service. GET's service area covers 160 square miles and serves approximately 459,000 residents. GET-A-Lift provides complementary paratransit service within metropolitan Bakersfield for those who are physically unable to use the fixed route service. Elderly and disabled services are also provided by the Consolidated Transportation Service Agency (CTSA).

GET has determined that within metropolitan Bakersfield, the east and southeast areas exhibit the highest service potential. This analysis is based on population density, income, auto ownership, and age. Other areas with high transit potential are portions of Oildale and central Bakersfield. The lowest potential rider areas include portions of the southwest and northwest.

Total transit ridership across Kern County showed a slight decline over the years FY2004-2007 as shown in Table 4-4 in the RTP. Ridership for GET and Kern Regional Transit (KRT), however, has increased in more recent years as a result of service expansion and rising gasoline prices. Ridership reflected in Table 4-4 for GET and GET-A-Lift for 2007-08 was 7,029,420 and for 2008-09 was 7,578,323. An all-time record for ridership was achieved in 2008-09.

For GET, the regular fare is $1.00. For seniors & the disabled, the fare is $.50. The fare for GET-A-Lift is $2.00.

In 2008-09, GET's fixed route operation achieved its highest ridership level ever with 7,514,503 riders. Over the last several years, GET-A-Lift's ridership has increased almost every year. Changes since 2000 include: Sunday and evening service was initiated, Day Passes replaced transfers, headways were improved on several routes, and the first 40 ft.-length buses were placed into service. GET has made a commitment to improving Kern County's air quality by purchasing compressed natural gas (CNG) buses. By early 2006, GET's entire fleet, including those assigned to staff, was CNG-fueled. GET has installed bike racks on all of its buses to facilitate intermodal trips, which provides an ancillary improvement to air quality. In partnership with IKEA and Tejon Ranch, GET initiated a new express route between Downtown Bakersfield, Bakersfield Auto Mall, and Tejon Industrial Complex in October 2008. A permanent park and ride lot for this service will be established in the Greenfield area.

Table 4-3 in Chapter 4 of the 2011 RTP summarizes public transportation services operated within Kern County, with a description of services provided by each rural public transit provider, including hours of operation, type of service provided.

Aviation

According to the RTP, Kern County's airports address a variety of local and regional services. The aviation system connects the traveling public and freight and cargo movers with California's major metropolitan airports. The aviation system serves the U.S. military directly or in an auxiliary fashion. Many of the airports support local farmers as well as police and medical services. Aviation activities also provide recreational opportunities for the citizens of Kern County. Together, the airports provide a viable mobility option for the County's residents and businesses.

Kern County's regional airport system includes a diverse range of aviation facilities. It is comprised of seven airports operated by the Kern County Department of Airports, four municipally owned airports, three airport districts, two privately owned public-use airports, and two military facilities (reference Figure 3-12). Scheduled air carrier and commuter airline service is provided at Meadows Field, which serves metropolitan Bakersfield and surrounding communities. Scheduled commuter services are also provided at Inyokern Airport, which serves communities in the Mojave desert and eastern Sierra regions. General aviation needs are served by public use airports, both publicly and privately owned, throughout the County. These serve the full range of business, agriculture, recreation, and personal aviation activities. Kern County's aviation system includes 14 publicly owned airports that are open for use by the general public:

- Meadows Field;
- Elk Hills/Buttonwillow;
- Kern Valley Airport;
- Lost Hills Airport;
- Poso Airport;
- Wasco Airport;
- Taft Airport;
- Bakersfield Municipal Airport;
- California Municipal Airport;
- Delano Municipal Airport;
- Tehachapi Municipal Airport;
- Mojave Airport;
- Inyokern Airport; and
- Minter Field.

Characteristics of Kern County's public access airports vary significantly, from size and number of operations to their types of activities and to their expected growth and impact on their local economies. As a group, the airports combine a range of services designed to meet the passenger, business, agricultural, recreational and emergency service needs for the region.

Kern County's primary airport - Meadows Field, is located on 1,107 acres four miles northwest of central Bakersfield, is classified as a commercial service primary airport under the National Plan of Integrated Airport Systems. This facility serves both commercial and general aviation needs for Bakersfield and the southern San Joaquin Valley region. Meadows Field was the first airport for the Bakersfield area and was established in 1927. By 1930, the airport handled over 12,000 passengers and close to 7,000 operations annually; by 2003, Meadows Field handled 98,886 annual operations with a total of 345,000 passengers; however, in 2009 the passenger count was lower at

208,677. Meadows Field is also an active general aviation airport. Air cargo operations for the Kern region are primarily conducted at Meadows Field, with an increase in activity from 964 tons in 1995 to over 1700 tons by 2035.

Major improvements to Kern County airports are described in Chapter 4 of the RTP.

Non-Motorized Existing Conditions

As noted in the RTP, bicycle facilities generally fall into three distinct categories: Class I bike and variations of Class I facilities are the first category. Class I facilities provide a means of safe and reliable means of transportation for those wishing to cycle or walk to their destinations. Several jurisdictions have variations on Class II facilities, which provide optional striping scenarios to allow on-street parking. The County has a Class III variation that provides a four foot delineated shoulder and bicycle route signing in rural areas.

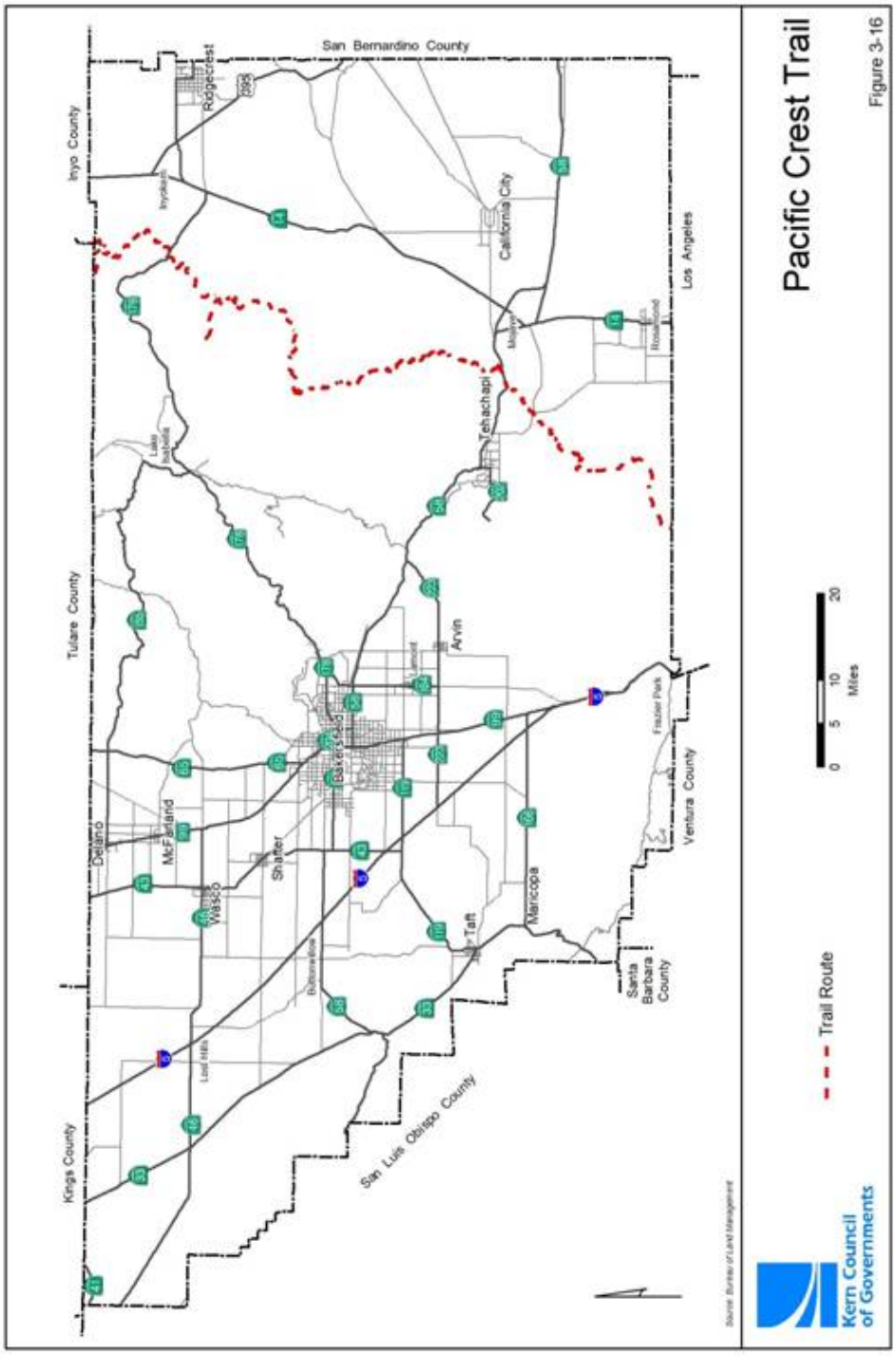
In October 2001, Kern COG adopted the *Kern County Bicycle Facilities Plan*, which provided a compendium of bicycle transportation facilities, both constructed and planned. Its intent is to serve as the guide to developing bicycle facilities in an orderly and timely fashion within the region. In the transportation planning profession, more emphasis is being placed on "soft" solutions to transportation control and traffic congestion. The trend toward solving traffic issues without resorting to expansion of highway and freeway facilities has been evident over the last decade. Kern County has many notable success stories where more effective management of the existing transportation system has reduced or eliminated the need for costly and disruptive expansions. Providing alternatives to automobile travel is a central tenet for smart growth. The *Kern County Bicycle Facilities Plan* is incorporated by reference.

For many, the use of bicycles as a means of transportation has several appealing aspects. Bicycling has positive air quality, energy, economic and health impacts and can reduce automobile congestion. From an air quality perspective, every bicycle trip, which substitutes for auto travel, results in cleaner air. Bicycles do not consume scarce fuel, maintenance is low, and bicycling can be used for commuting as well as for recreational purposes while it promotes physical exercise.

The bicycle's door-to-door capability for shorter trips makes it an attractive alternative mode of transportation in the Kern region when the climate is mild, because the flat terrain is ideal for riding. Implementation of a bikeway system will provide connectivity between cities and access to destinations of regional interest, as well as commuter lanes in the Kern region and in many smaller cities within the county.

The planned bikeways regional system is shown in Chapter 4 of the RTP. The plan calls for community routes and routes, which link communities and provide access to activity centers, including major commercial and employment centers, major recreational sites, and schools. All of the cities in the County and the County itself have planned bikeway facilities, although limited available funding has had an impact on their construction. Nevertheless, local agencies continue to add to the inventory of completed bikeways on an ongoing basis, particularly in conjunction with new development. The RTP also includes specifics regarding pedestrian trails and other non-motorized facilities. A major trail within the County includes the Pacific Crest Trail depicted in Figure 3-16.

Plans and programs contained in the RTP include planned pedestrian, trail, and bicycle systems. The projects are planned to minimize traffic disruption and maximize safety for trail users, cyclists and pedestrians. Details regarding planned pedestrian, trail and bikeway systems are provided in Section 2 of this EIR.


Pacific Crest Trail
Figure 3-16
Trail Route
0 5 10 20
Miles
San Bernardino County
Inyo County
Tulare County
Kings County
San Luis Obispo County
Santa Barbara County
Ventura County
Los Angeles
Ridgecrest
California City
Tehachapi
Arvin
Lamont
Frazier Park
Bakersfield
Delano
McFarland
Wasco
Shafter
Maricopa
Taft
Buttonwillow
Lost Hills
Lake Isabella
Kern Council of Governments

Railroad and Goods Movement

The San Joaquin AMTRAK route provides passenger rail service to Oakland and Bakersfield seven (7) times a day. AMTRAK also provides bus service from various rail stations along the San Joaquin route to cities that are not accessible by rail, such as Los Angeles, Sacramento, San Francisco, and San Jose.

Trains provide an economical means of transporting bulk goods. Although these engines demand heavy fuel consumption, their ability to haul large amounts of cargo makes for an overall low energy requirement per unit of weight when compared to truck or air transport. Two major rail companies, Union Pacific (UP) and Burlington Northern Santa Fe (BNSF), serve Kern County. UP and CSX Transportation have teamed to offer perishable goods service and Express Lane offers refrigerated service from the San Joaquin Valley to New York and Boston. The San Joaquin Valley Railroad operates a regional freight service between Tulare, Fresno, and Kern Counties on leased Union Pacific branch lines connecting outlying areas to mainline carriers, moving freight primarily comprised of agricultural products, throughout the Valley.

A number of long-range passenger rail and goods movement improvements are described in Chapter 4 of the current RTP.

Environmental Impacts, Mitigation Measures, and Significance After Mitigation

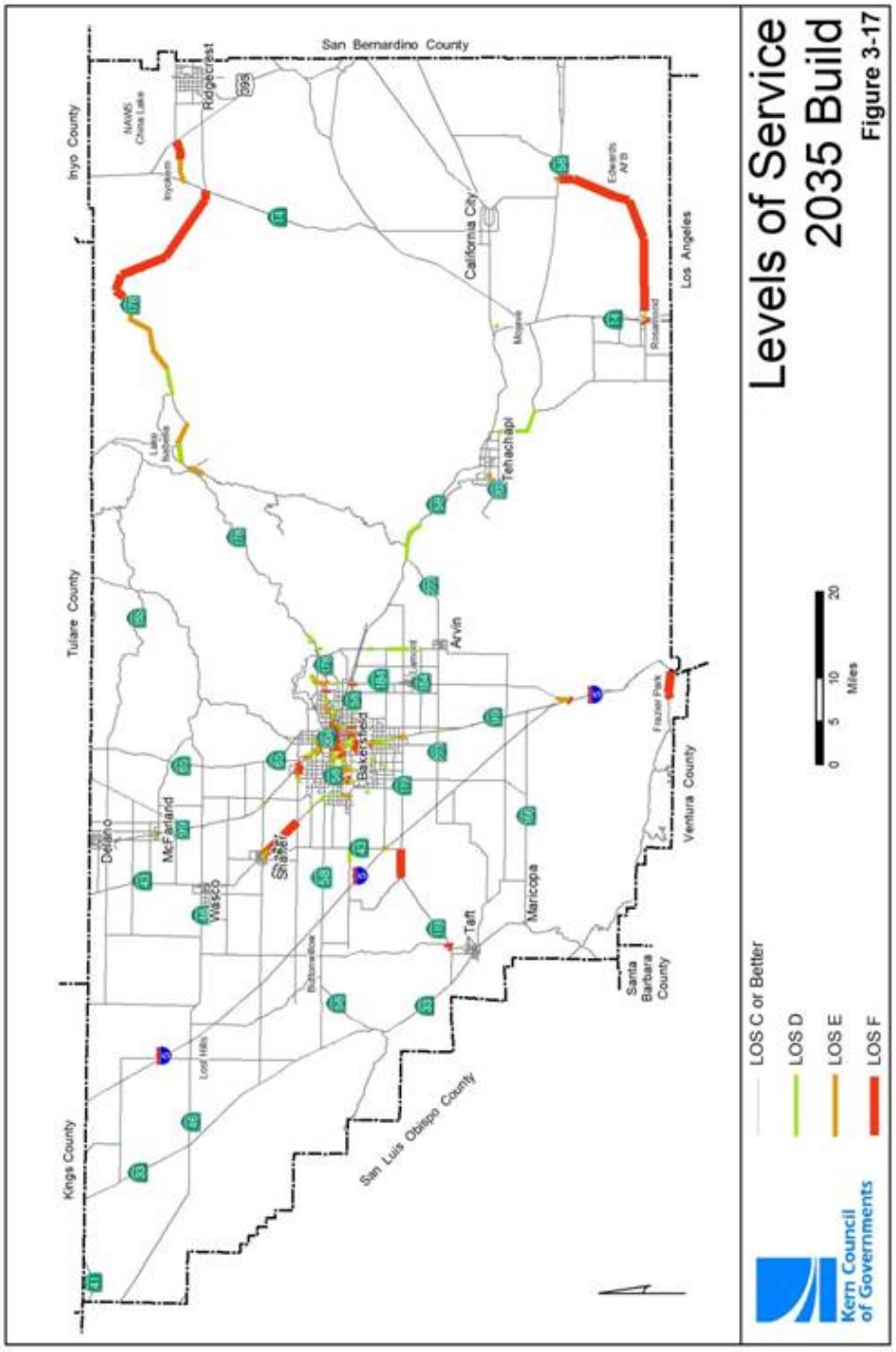
Criteria for Significance

The CEQA Guidelines establish that a significant impact would be expected to occur if the project would:

- Increase traffic, which is substantial in relation to the existing traffic load and capacity of the street system;
- Exceed a level of service standard established;
- Change air traffic patterns;
- Increase hazards due to a design feature or incompatible uses;
- Result in inadequate emergency access; and/or
- Conflict with adopted policies, plans or programs supporting alternative transportation.

Impact 3.14.1

Kern COG was responsible for preparing existing and future LOS analysis using its Regional Traffic Model. Results of the 2035 LOS segment analysis with the Project along the RTP Regionally Significant Roads System are reflected in Figures 3-17 and 3-18. Figures 2-4 through 2-7 in Section 2 of this EIR provide a graphic display of the street and highway improvement projects included in the RTP. Figures 3-19 and 3-20 provide the resulting LOS assuming the No Build condition. The No Build condition assumes that existing streets and highways and only those improvements contained in the approved Transportation Improvement Program through the Year 2014/15, would be in place. When the improvements associated with the Project (combined with the projects contained in the 2011 RTP) are added to the model, significantly fewer deficient segments result compared to the “No Build” Alternative.


Levels of Service
2035 Build
Figure 3-17
LOS C or Better
LOS D
LOS E
LOS F
0 5 10 20
Miles
Kern Council of Governments
San Bernardino County
Inyo County
Tulare County
Kings County
San Luis Obispo County
Santa Barbara County
Ventura County
Los Angeles
Ridgecrest
NAWS China Lake
Inyokern
California City
Edwards AFB
Mojave
Rosamond
Lake Isabella
Tehachapi
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Shafter
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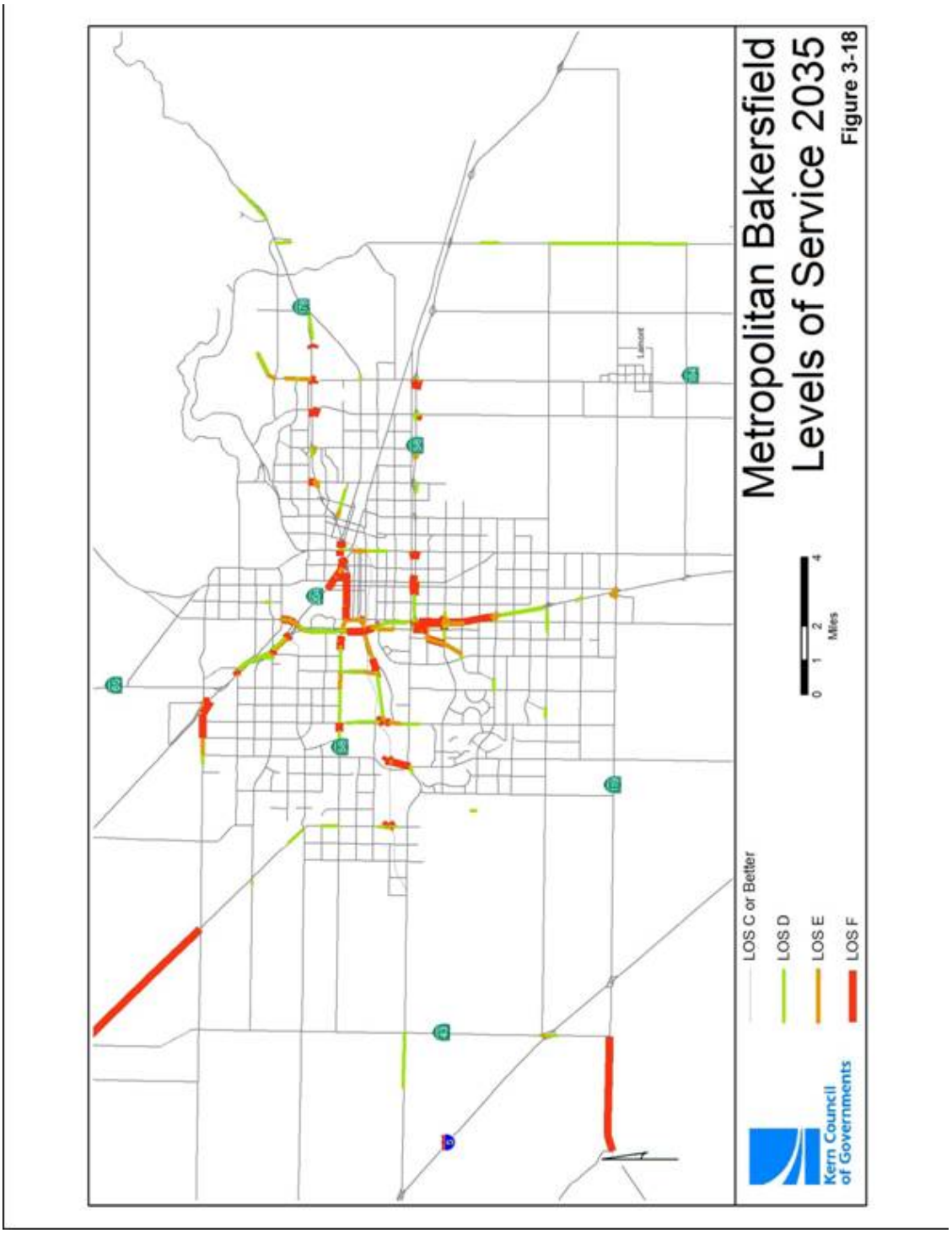
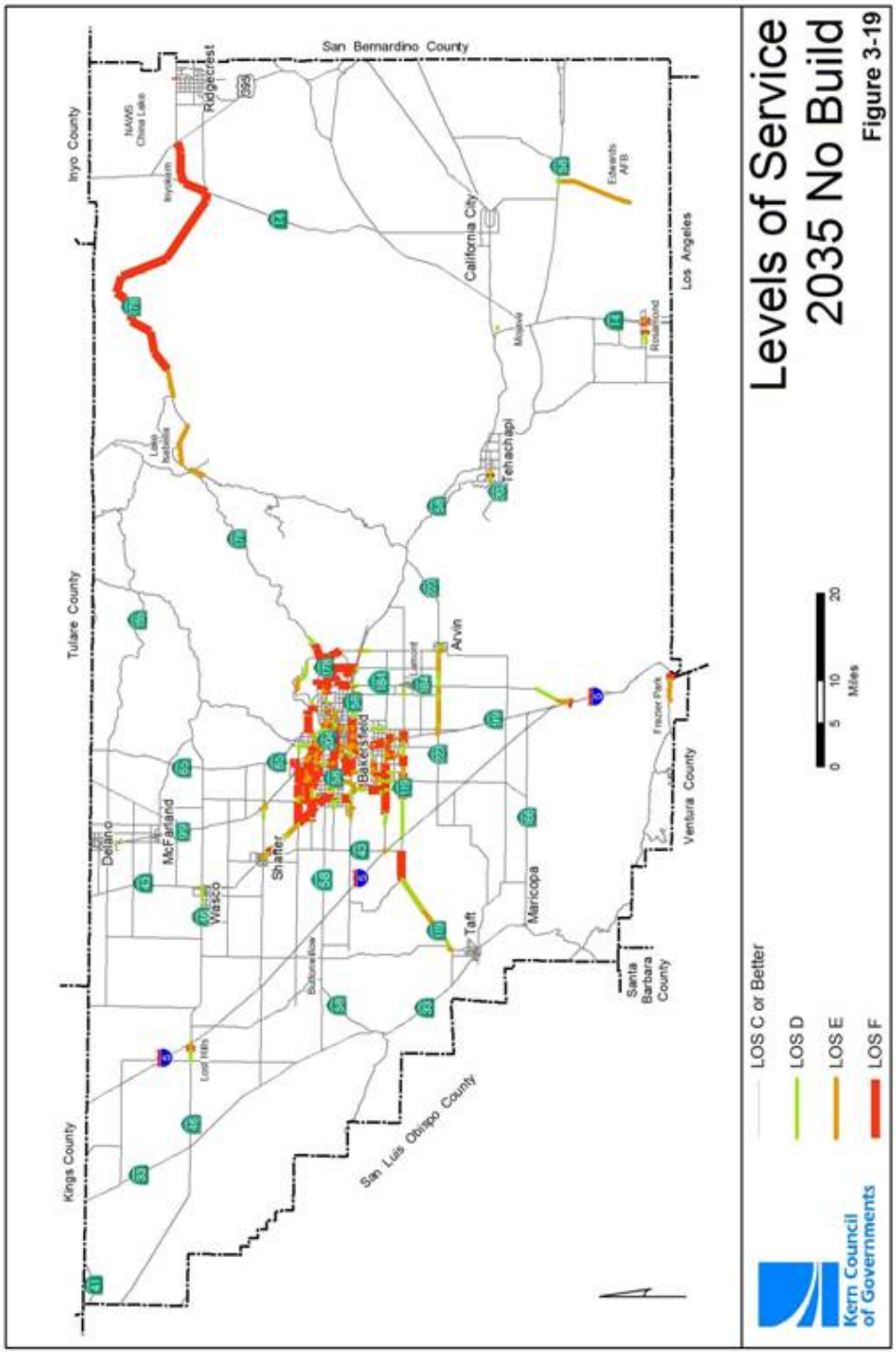
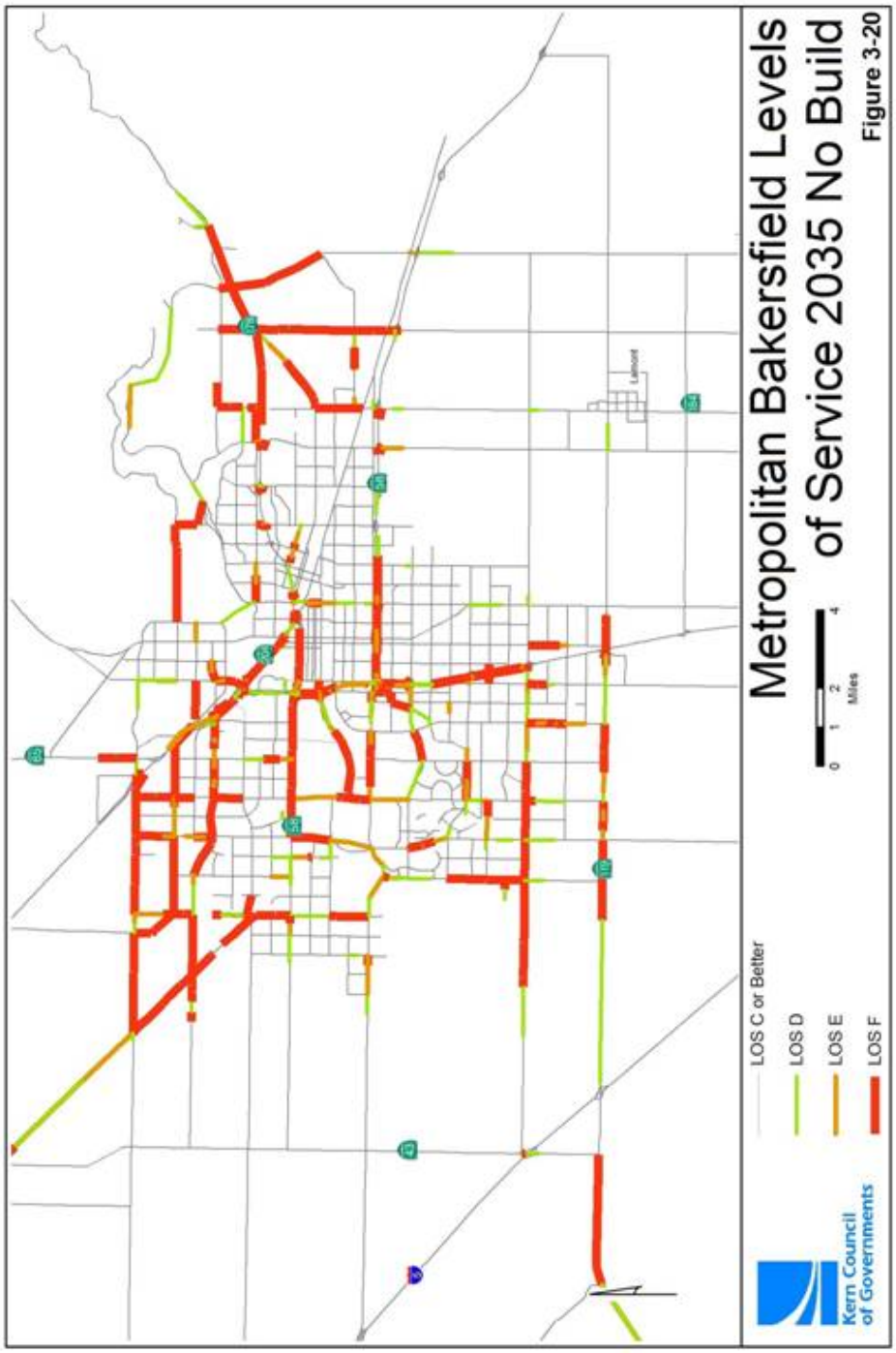
Taft
Maricopa
Buttonwillow
Lost Hills


Metropolitan Bakersfield
Levels of Service 2035
Figure 3-18
LOS C or Better
LOS D
LOS E
LOS F
0 1 2 4
Miles
Kern Council of Governments

Fig


Levels of Service
2035 No Build
Figure 3-19
LOS C or Better
LOS D
LOS E
LOS F
0 5 10 20
Miles
Kern Council of Governments
San Bernardino County
Inyo County
Tulare County
Kings County
San Luis Obispo County
Santa Barbara County
Ventura County
Los Angeles
Ridgecrest
California City
Tehachapi
Arvin
Bakersfield
Shafter
Wasco
Delano
McFarland
Taft
Maricopa
Edwards AFB


Metropolitan Bakersfield Levels of Service 2035 No Build
Figure 3-20
LOS C or Better
LOS D
LOS E
LOS F
0 1 2 4
Miles
Kern Council of Governments
Lamont

Results of the LOS deficiencies along the regionally significant system under the No Project Alternative are provided in Chapter 4 of the 2011 RTP on file with Kern COG and on the Kern COG Website: www.kerncog.org/publications.

The resultant number of deficient facilities along the Regionally Significant Roads System with and without the Project indicates that when the Individual improvement project improvements are made to the regionally significant street and highway system, LOS conditions within the Kern region will significantly improve. Capacity increasing projects that would improve these deficient levels of service are not included in the Project.

Congestion decreases and transit use increases significantly with the Project compared to the No Build Alternative. In addition, employment choices are increased for both automobile and transit users. Because one of the stated objectives of the Project is to reduce congestion and improve mobility, this is considered a significant beneficial impact.

Mitigation Measures

Measures intended to reduce vehicle miles traveled and reduce congestion are part of the 2011 RTP. These include: increasing rideshare and work-at-home opportunities to reduce demand on the transportation system, investments in non-motorized transportation and maximizing the benefits of the land use/transportation connection, other Travel Demand Management measures described in the 2011 RTP and in local agency General Plans, and key transportation investments targeted to reduce congestion levels and improve LOS.

Significance After Mitigation

Implementation of measures beyond those institutionally and economically feasible measures identified in the 2011 RTP would be expected to reduce congestion levels and improve LOS, however even with this mitigation, the 2035 levels of service would still include a number of segments that will operate at deficient levels or at LOS E and F. Therefore, the congestion levels would remain a significant impact.

Impact 3.14.2

The proposed Project includes a series of individual improvement projects and programs (street and highway, transit, bicycle and trail, pedestrian and other projects) to help improve the multi-modal transportation system. Implementation of these projects and programs will improve transportation system performance. In addition, the Project includes numerous individual transportation projects and programs all aimed at implementing the RTP goals. The overall impact of the Project on regional transportation therefore is considered a beneficial impact.

The overarching goal for the Project is to develop a fully integrated, multi-modal transportation system to serve as a catalyst to enhance the quality of life enjoyed by the current and future residents of Kern County. From a transportation and circulation perspective, the implementation of the Project is not anticipated to result in any perceived negative effect on transportation system performance, but will have the effect of improving transportation system performance regionally.

Mitigation Measure

Figu

This impact is considered beneficial; mitigation measures are not required.

Significance After Mitigation

Less than significant.

Impact 3.14.3

Individual improvement projects may increase traffic volumes not only on streets and highways, as well as at at-grade highway-rail crossings.

Mitigation Measure

As part of individual improvement project environmental review, individual agencies will consider impacts and plan for grade separations along major thoroughfares, identify to the extent feasible, improvements to existing at-grade highway-rail crossings caused by increases in traffic volumes, and provide, to the extent possible, appropriate fencing to limit the access of trespassers onto the railroad right-of-way. The implementation agencies or local jurisdiction will be responsible for ensuring adherence to the mitigation measure. Kern COG will be provided with documentation indicating compliance with the mitigation measure.

Significance After Mitigation

Less than significant.

3.15 ENERGY AND ENERGY CONSERVATION

This section describes the existing energy resources, and analyzes the effects on energy consumption and conservation that would result from implementing the proposed 2035 projects.

Regulatory

Federal

- Energy Policy and Conservation Act

  The Energy Policy and Conservation Act of 1975 sought to ensure that all vehicles sold in the U.S. would meet certain fuel economy goals. Through this Act, Congress established the first fuel economy standards for on-road motor vehicles in the U.S. Pursuant to the Act, the National Highway Traffic and Safety Administration, which is part of the USDOT, is responsible for establishing additional vehicle standards and for revising existing standards. Since 1990, the fuel economy standard for new passenger cars has been 27.5 mpg. Since 1996, the fuel economy standard for new light trucks (gross vehicle weight of 8,500 pounds or less) has been 20.7 mpg. Heavy-duty vehicles (i.e., vehicles and trucks over 8,500 pounds gross vehicle weight) are not currently subject to fuel economy standards. Compliance with federal fuel economy standards is determined on the basis of each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the U.S. The Corporate Average Fuel Economy (CAFE) program, which is administered by the EPA, was created to determine vehicle manufacturers' compliance with the fuel economy standards. The EPA calculates a CAFE value for each manufacturer based on city and highway fuel economy test results and vehicle sales. Based on the information generated under the CAFE program, the USDOT is authorized to assess penalties for noncompliance.

- Energy Policy Act of 1992 (EPAct)

  The Energy Policy Act of 1992 (EPAct) was passed to reduce the country's dependence on foreign petroleum and improve air quality. EPAct includes several parts intended to build an inventory of alternative fuel vehicles (AFVs) in large, centrally fueled fleets in metropolitan areas. EPAct requires certain federal, state, and local government and private fleets to purchase a percentage of light-duty AFVs capable of running on alternative fuels each year. In addition, financial incentives are also included in EPAct. Federal tax deductions will be allowed for businesses and individuals to cover the incremental cost of AFVs. States are also required by the act to consider a variety of incentive programs to help promote AFVs.

- Energy Policy Act of 2005

  The Energy Policy Act of 2005 was signed into law by President Bush on August 8, 2005. Generally, the act includes provisions for renewed and expanded tax credits for electricity generated by qualified energy sources, such as landfill gas; provides bond financing, tax incentives, grants, and loan guarantees for clean renewable energy and rural community electrification; and establishes a federal purchase requirement for renewable energy.

- The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users

  SAFETEA-LU, enacted August 10, 2005, authorizes the federal surface transportation programs for highways, highway safety, and transit. SAFETEA-LU addresses the many challenges facing our transportation system today—challenges such as improving safety, reducing traffic congestion, improving efficiency in freight

movement, increasing intermodal connectivity, and protecting the environment—as well as laying the groundwork for addressing future challenges. SAFETEA-LU promotes more efficient and effective federal surface transportation programs by focusing on transportation issues of national significance, while giving state and local transportation decision makers more flexibility for solving transportation problems in their communities.

State of California

- Senate Bill 1078

  SB 1078 establishes a renewable portfolio standard (RPS) for electricity supply. The RPS requires that retail sellers of electricity, including investor-owned utilities and community choice aggregators, provide 20 percent of their supply from renewable sources by 2017. This target date was moved forward by SB 1078 to require compliance by 2010. In addition, electricity providers subject to the RPS must increase their renewable share by at least 1 percent each year. The outcomes of this legislation will impact regional transportation powered by electricity.

- State of California Integrated Energy Policy Report

  In 2002, the Legislature reconstituted the State's responsibility to develop an integrated energy plan for electricity, natural gas, and transportation fuels. The California Energy Commission (CEC) adopts and transmits to the Governor and Legislature a report of findings every 2 years. At a Special Business Meeting on November 12, 2003, the CEC adopted the 2003 Integrated Energy Policy Report. The 2004 Update to the Integrated Energy Policy Report was adopted by the CEC on November 3, 2004. The 2005 Integrated Energy Policy Report was adopted by the CEC on November 21, 2005. These reports make recommendations to increase California's energy supplies, reduce energy demand, broaden the range of alternatives to conventional energy sources, and improve the State's energy delivery infrastructure.

- California Strategy to Reduce Petroleum Dependence (AB 2076)

  AB 2076 (Chapter 936, Statutes of 2000) requires the CEC and the Air Resources Board (ARB) to develop and submit to the Legislature a strategy to reduce petroleum dependence in California. The statute requires the strategy to include goals for reducing the rate of growth in the demand for petroleum fuels. In addition, the strategy is required to include recommendations to increase transportation energy efficiency as well as the use of nonpetroleum fuels and advanced transportation technologies including alternative fuel vehicles, hybrid vehicles, and high-fuel efficiency vehicles.

  The strategy, Reducing California's Petroleum Dependence, was adopted by the CEC and ARB in 2003. The strategy recommends that California reduce on-road gasoline and diesel fuel demand to 15 percent below 2003 demand levels by 2020 and maintain that level for the foreseeable future; the Governor and Legislature work to establish national fuel economy standards that double the fuel efficiency of new cars, light trucks, and SUVs; and increase the use of nonpetroleum fuels to 20 percent of on-road fuel consumption by 2020 and 30 percent by 2030.

- Alternative Fuels Plan Assembly Bill 1007

  AB 1007 requires the CEC to prepare a state plan to increase the use of alternative fuels in California. The plan shall include an evaluation of alternative fuels for emissions or criteria air pollutants, air toxics, GHGs, water pollutants, and other harmful substances, and their impacts on petroleum consumption. The plan shall set goals for increased alternative fuel use in the state for the years 2012, 2017, and 2022 and recommend policies to ensure the alternative fuel goals are attained, including standards on transportation fuels and vehicle and policy

mechanisms to ensure vehicles operating on alternative fuels use those fuels to the maximum extent feasible. The plan was adopted in December 2007.

- Bio-energy Action Plan – Executive Order #S-06-06

  Executive Order #S-06-06 establishes targets for the use and production of bio-fuels and bio-power and directs state agencies to work together to advance biomass programs in California while providing environmental protection and mitigation. The executive order establishes the following target to increase the production and use of bio-energy, including ethanol and biodiesel fuels made from renewable resources: produce a minimum of 20 percent of its bio-fuels within California by 2010, 40 percent by 2020, and 75 percent by 2050. The executive order also calls for the state to meet a target for use of biomass electricity.

- Governor's Low Carbon Fuel Standard (Executive Order #S-01-07)

  Executive Order #S-01-07 establishes a statewide goal to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020 through establishment of a Low Carbon Fuel Standard. The Low Carbon Fuel Standard shall be incorporated into the State Alternative Fuels Plan required by AB 1007 and is one of the proposed discrete early action GHG reduction measures identified by ARB pursuant to AB 32.

Local

Kern Energy Watch Program

Kern COG has developed the Kern Energy Watch Program to design and operate a local government partnership program for the purpose of increasing energy conservation and efficiency within the county, cities, special districts and other units of local government in the Kern region. Public utility partners include Pacific Gas & Electric, Southern California Edison and Southern California Gas (Sempra Energy).

The program is intended to:

- Organize and coordinate the activities of the Kern Energy Advisory Committee (KEAC), including preparation of meeting agendas, item supporting documentation and minutes;
- Compose and circulate a Request for Proposals for professional services in designing an comprehensive and integrated Kern Regional Energy Plan;
- Conduct an inventory and needs assessment of local resource, information and training activities of agencies in the Kern region;
- Design and implement a marketing program to provide program information to units of local government;
- Meet with each unit of local government and secure a formal commitment to join the Kern Energy Watch Program;
- Coordinate the conduct of energy assessments and audits;
- Conduct or coordinate the conduct of energy efficiency workshops & seminars; and
- Coordinate the provision of technical support and services for energy efficient retrofit Projects.

Kern Regional Energy Plan

Kern COG will embark on the development of this plan during FY 2010-11. Kern COG will develop and coordinate the implementation of the Kern Regional Energy Plan as part of its Kern Energy Watch Program. The effort will also involve integrating transportation and energy planning efforts in the Kern region.

Environmental Setting

Energy Consumption and Conservation

The study area is comprised of highways, railways, bicycle trails, state routes, roads, and Caltrans rights-of-way. This analysis assumes that automobiles, trucks, transit buses, and other forms of transportation would continue to operate within the Kern region and use a variety of energy forms, including gasoline, compressed natural gas, diesel, and electricity. This section considers the supply and demand for both electricity and fossil fuels.

Energy is fundamental to the economy and the quality of life of the Kern County region. The primary energy source for the U.S. is petroleum (also referred to as "oil"), which is refined to produce fuels like gasoline, diesel, and jet fuel. Oil is a finite, nonrenewable energy source. World consumption of petroleum products has grown steadily since 1983; as of 2005, world consumption of oil had reached 84 million barrels per day (GAO 2007). The world supply of oil is anticipated to peak (i.e., reach the point of maximum production) sometime between now and 2040, before beginning a terminal decline that will put a significant strain on the economy if not anticipated and mitigated. However, the timing of the peak depends on multiple, uncertain factors that will affect how quickly remaining oil is consumed, such as the amount of oil that still remains in the ground; how much of the amount in the ground can be extracted and produced based on technological, economic, and environmental feasibility; and future demand for oil.

The U.S., with approximately 5 percent of the world's population, accounts for just fewer than 25 percent of world oil consumption, roughly 21 million barrels per day (EIA 2007). U.S. oil production peaked around 1970 and has been declining ever since; it was about five million barrels per day in 2005. As a result, the U.S. imported about 76 percent of its oil in 2005. The U.S. transportation sector is heavily dependent on oil and represents about 69 percent of U.S. petroleum consumption. Within the transportation sector, light vehicles (i.e., cars, light trucks [two-axle, four-tire trucks], and motorcycles) represent about 60 percent of the petroleum-based energy consumption.

California's transportation sector is equally dependent upon oil, with petroleum-based fuels currently providing nearly all (96 percent) of California's transportation energy needs (State of California 2007). Furthermore, transportation-related activities represent almost half (48 percent) of California's petroleum-based fuel consumption. According to a 2005 California Energy Commission (CEC) report, California's demand for transportation fuels has increased 53 percent in the last 20 years, and in the next 20 years gasoline and diesel demand will increase another 36 percent (CEC 2005). California refineries increasingly rely on imported petroleum products to meet this demand. In 2003 the CEC and ARB adopted a two-part strategy to reduce the state's petroleum demand: promoting improved vehicle efficiency and increasing the use of alternative fuels. In 2005, alternative fuels represented 6 percent of the state's transportation energy needs. In 2006, CEC and ARB set a goal that 20 percent of all transportation energy in 2020 comes from alternative fuels. State plans, programs, and regulations to implement this strategy are further discussed in the Regulatory Setting section below.

Similar to California and the U.S. as a whole, the Kern region relies primarily on oil to meet its transportation needs. Motor vehicles are the largest consumer of fuels in the region's transportation sector. After gasoline, diesel fuel is the most utilized transportation energy source. The primary consumers of diesel fuel in the transportation sector are heavy-duty trucks, with medium-duty trucks, buses, light-duty passenger cars, and railway locomotives accounting for remaining diesel fuel consumption.

Alternative fuels are defined as fuels not derived from petroleum, such as natural gas, ethanol, and electricity. However, like petroleum, alternative fuels like natural gas and ethanol (which is primarily composed of diesel fuel) are also nonrenewable, finite resources. Electricity is also considered nonrenewable when generated from natural gas or coal, but considered renewable when generated from sources like solar, hydroelectric, or wind energy. Most alternative fuel facilities in the region supply compressed natural gas (CNG) or electricity. The region's limited alternative fuel infrastructure severely constrains the use of alternative fuel passenger vehicles.

Although average fuel efficiency for autos and trucks has experienced some improvements during the last quarter-century, fuel consumption associated with the large increase in VMT has exceeded the fuel consumption reductions achieved by improved efficiency, and the total amount of annual fuel consumption has continued to increase. The equipment and vehicles involved in the construction of transportation infrastructure (i.e., roadway and highway improvements; rail lines; etc.) also consume energy. Currently, construction equipment and vehicles are generally dependent on petroleum-based fuels.

Energy Conservation and Global Climate Change

The consumption of nonrenewable energy (primarily gasoline and diesel fuel) associated with construction activities and the operation of passenger, public transit, and commercial vehicles results in GHG emissions that cause global climate change (also referred to herein as "climate change" and "global warming"). In addition, alternative fuels like natural gas (including CNG and liquid natural gas [LNG]), ethanol, and electricity (unless derived from solar, wind, nuclear, or another energy source that does not produce carbon emissions) also result in GHG emissions and contribute to global climate change. An overview of climate change, the anticipated impacts of climate change to California, and the climate change impacts of the proposed 2011 RTP are provided in this Chapter, Section 3.5. Impacts and mitigation measures associated with climate change also relate to the conservation of energy resources.

Environmental Impacts, Mitigation Measures, and Significance After Mitigation

Criteria for Significance

The following significance criteria were used to determine the level of significance of impacts on energy resources and energy conservation resulting from the proposed Project. Significance criteria were developed based on Appendix F of the State CEQA Guidelines and on professional judgment. In general, an individual improvement project contained within the RTP would result in a significant energy impact if it:

- Results in an increase in total consumption of nonrenewable energy or reduces the ability of the region to conserve energy resources.

Impact Analysis

The proposed 2011 RTP plans improvements to the region's transportation network through the year 2035. Since the transportation sector accounts for a large portion of the energy consumed in the Kern region, implementation of transportation network improvements would affect the region's energy consumption through 2035. In addition, construction of these improvements would result in increased energy consumption due to the operation of construction equipment and vehicles during construction activities. Multiple factors beyond the control of Kern COG and outside the scope of the proposed 2011 RTP may influence future transportation-related energy consumption patterns under the proposed 2011 RTP. These factors include but are not limited to state and federal regulatory actions; local land use decisions; technological improvements; regional economic conditions; the fuel-efficiency and fuel-source of private automobiles; the price of oil, gasoline, diesel, electricity, and other fuels; the source of region's electric power (i.e., proportion of renewable and nonrenewable sources); the amount of oil imported by the U.S. and others.

Although energy consumption would increase under the proposed 2011 RTP, the transportation improvements are designed to the improve energy efficiency of the regional transportation system by increasing use of more fuel-efficient public transit, carpools, and vanpools, and improving circulation system levels of service. See the Climate Change discussion in Section 3.5 of the SEIR for a detailed discussion of RTP actions that promote GHG emissions reductions, energy conservation, energy efficiency and reduced fuel consumption. Examples of transportation

improvements included in the proposed 2011 RTP that would improve energy efficiency include proposed transit improvements that would encourage optimized use of public transportation, and enhanced transit programs with new routes that would operate at higher speeds. Public transportation provides a more energy-efficient mode of travel than single-passenger vehicles, thereby reducing the region's transportation energy consumption. Any reductions in traffic congestion realized through implementation of enhanced transit operations would also allow for more energy-efficient vehicular travel.

The proposed 2011 RTP would also involve highway and arterial widenings, and new freeway interchanges. This in turn would decrease travel time and congestion and consequently decrease fuel consumption from individual vehicles. Despite these energy efficient improvements, total and per capita energy consumption associated with the transportation system is still anticipated to increase in 2035 under the proposed 2011 RTP.

The 2011 RTP encourages the transport of goods by rail to reduce congestion on the freeway system. Hauling goods by rail has a positive energy impact. The Federal Railroad Administration estimates that intermodal rail is 1.4 to 3.4 times more fuel efficient than trucks. This indicates reduced energy efficiency of goods movement in the region and increased nonrenewable energy consumption.

The construction of transportation infrastructure identified in the proposed 2011 RTP would involve the use of construction equipment and vehicles, which are generally dependent upon nonrenewable petroleum-based fuels, on a large scale. However, it is not feasible to estimate energy consumption associated with future construction of the projects in the proposed 2011 RTP at this program level of analysis. Nevertheless, the large scale of construction activities that would be required to implement the proposed 2011 RTP would result in an additional amount of additional energy consumption associated with the proposed 2011 RTP.

Lastly, the implementation of new transit stations and centers, transit priority measures, freeway and arterial widenings, and other improvements would include street and station lighting, parking structure lighting, traffic signals, electronic signage, and other ancillary components associated with the types of transportation improvements included in the proposed 2011 RTP. The energy consumption associated with these features would also increase under the proposed 2011 RTP.

Impact 3.15.1 - Energy Consumption & Conservation Impacts

Construction of the transportation improvements programmed in the proposed 2011 RTP would increase energy consumption due to the operation of construction equipment and vehicles. Given the number of large-scale improvements programmed into the proposed 2011 RTP, the increase in energy consumption associated with construction activities would be substantial. Although construction equipment and vehicles would be operated in accordance with all applicable rules and regulations, the substantial increase in energy consumption associated with the construction equipment and vehicles primarily powered by nonrenewable fuels under the proposed 2011 RTP is considered a significant impact.

Operation of the transportation improvements identified in the proposed 2011 RTP would increase the total and per capita amount of gasoline and diesel fuel consumption associated with the regional transportation network. Since gasoline and diesel are nonrenewable, petroleum-based fuels, the increase in gasoline and diesel consumption under the proposed 2011 RTP is considered a significant impact.

In addition to increased energy consumption directly associated with transportation activities, energy consumption would also increase as a result of new lighting including, but not limited to, lighting for streets stops or stations, transit station parking structures, and rail tunnels; traffic signals; electronic signage; and other ancillary electric, natural gas, or other energy-consuming components of transportation improvements that would be implemented under the

proposed 2011 RTP. Increased energy consumption levels associated with these ancillary project features are considered a significant impact.
The proposed 2011 RTP includes goals and policies supporting smart growth through financial incentives, housing and mixed-use projects at existing and planned transit stations, support for local efforts to develop pedestrian master plans, and other activities that tend to reduce GHG emissions. However, since Kern COG has no direct authority over land use planning and other local decisions, the extent to which the goals and policies supporting smart growth would be implemented by local jurisdictions is unknown.

Since the 2011 RTP (2035 Planned scenario) would decrease highway congestion and enhance alternative modes relative to the No Project (2007 RTP) and No Build alternatives (2035 growth versus existing and programmed projects), it would result in potentially beneficial effects on the consumption and conservation of energy resources.

Mitigation Measures

The following mitigation measures shall be implemented by project implementation agencies to reduce the significant energy impacts of the proposed 2011 RTP. In addition, climate change mitigation measures referenced in this Chapter, Section 3.5 will also contribute to the mitigation of energy consumption and energy conservation impacts.

- Project implementation agencies shall review energy impacts as part of any CEQA-required project-level environmental analysis and specify appropriate mitigation measures for any identified energy impacts.

- During the design and approval of transportation improvements implemented under the proposed 2011 RTP, the following energy efficiency measures shall be incorporated when applicable:

  - The design or purchase of any lighting fixtures including but not limited to lighting at transit stations, arterials or freeways, and parking structures/lots shall achieve energy reductions beyond an estimated baseline energy use for such lighting.
  - LED technology shall be used for all new or replaced traffic lights, rail signals, and other features compatible with LED technology.

- Local agencies should consider various best practices and technological improvements that can reduce the consumption of fossil fuels such as:

  - Expanding light-duty vehicle retirement programs
  - Increasing commercial vehicle fleet modernization
  - Implementing driver training modules on fuel consumption
  - Replacing gasoline powered mowers with electric mowers
  - Reducing idling from construction equipment
  - Incentivizing alternative fuel vehicles and equipment
  - Developing infrastructure for alternative fueled vehicles
  - Implementing truck idling rules, devices, and truck-stop electrification
  - Requiring electric truck refrigerator units
  - Reducing locomotives fuel use
  - Modernizing older off-road engines and equipment
  - Encouraging freight mode shift
  - Limit use and develop fleet rules for construction equipment
  - Requiring zero-emission forklifts

- Local agencies should include energy analyses in environmental documentation and general plans with the goal of conserving energy through the wise and efficient use of energy. For any identified energy impacts,

appropriate mitigation measures should be developed and monitored. Kern COG recommends the use of Appendix F, Energy Conservation, of the *CEQA Guidelines.*

- Local agencies should streamline permitting and provide public information to facilitate accelerated construction of solar and wind power.

- Local agencies should adopt a "Green Building Program" to promote green building standards. Green buildings can reduce local environmental impacts, regional air pollutant emissions and global greenhouse gas emissions. Green building standards involve everything from energy efficiency, usage of renewable resources and reduced waste generation and water usage. For example, water-related energy use consumes 19 percent of the state's electricity. The residential sector accounts for 48 percent of both the electricity and natural gas consumption associated with urban water use. While interest in green buildings has been growing for some time, cost has been a main consideration as it may cost more up front to provide energy-efficient building components and systems. Initial costs can be a hurdle even when the installed systems will save money over the life of the building. Energy efficiency measures can reduce initial costs, for example, by reducing the need for over-sized air conditioners to keep buildings comfortable. Undertaking a more comprehensive design approach to building sustainability can also save initial costs through reuse of building materials and other means.

  A comprehensive study of the value of green building savings is the 2003 report to California's Sustainable Building Task Force. In the words of the report: "While the environmental and human health benefits of green building have been widely recognized, this comprehensive report confirms that minimal increases in upfront costs of about 2% to support green design would, on average, result in life cycle savings of 20% of total construction costs -- more than ten times the initial investment. For example, an initial upfront investment of up to $100,000 to incorporate green building features into a $5 million project would result in a savings of $1 million in today's dollars over the life of the building."

- Local governments should alter zoning to improve jobs/housing balance, create communities where people live closer to work, and bike, walk, and take transit as a substitute for personal auto travel. Creating walkable, transit oriented nodes would generally reduce energy use and greenhouse gas emissions. Residential energy use (electricity and natural gas) accounts for 14 percent of California's greenhouse gas emissions. It is estimated that households in transit-oriented developments drive 45 percent less than residents in auto-dependent neighborhoods. In addition, mixed land uses (i.e., residential developments near work places, restaurants, and shopping centers) with access to public transportation have been shown to save consumers up to 512 gallons of gasoline per year. Furthermore, studies have shown that the type of housing (such as multi-family) and the size of a house have strong relationships to residential energy use. Residents of single-family detached housing consume over 20 percent more primary energy than those of multifamily housing and 9 percent more than those of single-family attached housing.

- Kern COG shall work with its member agencies to increase the number of AFVs (i.e., vehicles not powered strictly by gasoline or diesel fuel) both in municipally owned vehicles, as well as those owned by franchisees of these cities, such as trash haulers, green waste haulers, street sweepers, and curbside recyclable haulers.

- Bid solicitations for construction of projects proposed in the 2011 RTP and subsequent RTP updates shall preference the use of alternative formulations of cement and asphalt with reduced GHG emissions to the extent that such cement and asphalt formulations are available at a reasonable cost in the marketplace. Solicitations shall also preference the recycling of construction waste and debris if market conditions permit.

- Kern COG shall continue to develop, in coordination with the California Air Resources Board, a data and information collection and analysis system that provides an understanding of the energy demand and greenhouse gas emissions in the Kern region.

- All mitigation measures listed in this Chapter, Section 3.5.1 are incorporated by reference and shall be implemented by implementing agencies to address energy conservation impacts.

Significance After Mitigation

Implementation and monitoring of the above mitigation measures will provide the framework and direction for subsequent individual improvement project-specific mitigation designed to avoid or reduce the identified significant Project impacts to a less than significant level.

4.0 COMPARISON OF PROJECT ALTERNATIVES

4.1 INTRODUCTION

State CEQA Guidelines require that an EIR identify a range of reasonable Project alternatives, or alternative Project locations, which could feasibly meet the basic objectives of the Project, as well as evaluate the merits of the alternatives. The Guidelines also require that the No Project alternative and its impacts are evaluated, and that discussion should focus on alternatives that are capable of eliminating significant adverse environmental effects of the Project or reducing them to less-than-significant levels. The alternative impact analysis is presented below at a summary level of detail, relying upon the base information presented in Section 3. This section only provides a comparison for the purpose of selecting the environmentally superior alternative. If an alternative is clearly superior to the proposed project, it is to be designated as the superior alternative. If the alternative with the least environmental impact is the No Project alternative, then one of the other alternatives is to be identified as the environmentally superior alternative.

4.2 OVERVIEW

The impact analyses presented in Section 3 of this SEIR focuses on an analysis of the Project. Three (3) additional alternatives have been developed in this section of the SEIR to ensure that a reasonable range of alternatives to the Project is provided. For purposes of this analysis, Project alternatives include the "No Build", "No Project", and the "Vehicle Miles Traveled (VMT) Reduction" Alternatives.

No Build Alternative

This Alternative has been analyzed to determine whether environmental impacts associated with the Project will be lessened if planned improvements to the future transportation system were not made; that is, if improvements are not implemented beyond existing projects and those projects that are currently programmed in the Transportation Improvement Program (TIP). This Project Alternative would, however, consider projected (Year 2035) growth and development.

The No Build Alternative reflects all existing transportation systems, projects contained in the TIPs, projects contained in local agency Capital Improvement Programs (CIPs), and all projects that are considered "exempt" under the Air Quality Conformity Regulations.

Possible significant impacts could result from this alternative. In particular, impacts upon air quality, noise, land use, and the transportation or circulation systems would occur. These impacts are discussed below.

Impact 4.2.1

- Air Quality

  Transportation improvement projects, if not implemented, will result in significant environmental impacts. In particular, air quality will be significantly impacted. Overall, air quality in future years will be worse without implementation of planned improvement projects scheduled for implementation. A detailed assessment of such impacts is provided in the latest Air Quality Conformity Finding.

Even with significant trip reduction, air quality impacts associated with this project alternative cannot be mitigated. As a result, this project alternative is not considered viable.

- Noise

  Noise impacts are also considered significant. As vehicular travel increases and congestion levels worsen, noise impacts are enhanced. Without implementation of planned transportation improvements, noise levels will increase significantly beyond what can be economically mitigated.

- Land Use

  Land use impacts associated with this alternative could be significant. In order for this alternative to be viable, and not significantly impact existing and planned land use, major trip reduction strategies would be required beyond what may be feasible. Further, major changes in land use planning would be required in order to support enhanced trip reduction.

- Transportation/Circulation

  Numerous segments along the Regionally Significant System would experience major (LOS) deficiencies resulting from implementation of the No Build Project Alternative. These impacts are considered significant given the amount of average daily traffic that is projected by 2035. Significant delay and congestion well beyond the traffic capacity of these segments would be realized resulting in significant environmental and economic impacts. State highway segments projected to fall to LOS “E” or "F" and local agency segments projected to fall to LOS “E” or “F” under this projected alternative are identified in Figures 3-19 and 3-20.

  In addition to street and highway impacts, major impacts upon other modes of transportation would also be realized. Without implementation of planned mass transportation, aviation, non-motorized, and goods movement improvements, the transportation/circulation system will be severely impacted. These impacts would further reduce the ability of agencies in Kern County and the associated Air Basins to meet air quality standards and improve levels of congestion and delay.

No Project Alternative

California Environmental Quality Act (CEQA), federal SAFETEA-LU, and federal Air Quality Conformity regulations require assessment of a No Project Alternative. This alternative has been analyzed to determine whether environmental impacts associated with the Project will be lessened if planned improvements to the future transportation system as identified in the 2007 RTP and associated amendments (Amendments #1 and #2) were made. This Project Alternative would, however, consider projected (Year 2035) growth and development.

The No Project Alternative reflects all existing transportation systems, projects contained in the TIPs, projects contained in local agency Capital Improvement Programs (CIPs), and all projects that are considered "exempt" under the Air Quality Conformity Regulations.

Significant impacts could result from this alternative; specifically, impacts upon air quality, noise, land use, and transportation or circulation systems could occur. These impacts are discussed below.

Impact 4.2.2

- Air Quality

  Transportation improvement projects identified in the 2011 RTP, if not implemented, will result in significant environmental impacts. In particular, air quality will be significantly impacted but not to the extent under the No Build Project Alternative. Overall, air quality in future years will be worse without implementation of the planned improvement projects contained in the 2011 RTP. This alternative would limit the amount of funding to other forms of transportation or to the limits identified in the 2011 RTP. As a result, this project alternative is not considered viable.

- Noise

  Noise impacts are also considered significant. Under the No Project Alternative, vehicular travel will increase and congestion level will worsen, and noise impacts will be enhanced when compared to the Preferred Project Alternative. Without implementation of planned transportation improvements identified in the 2011 RTP, noise levels will increase significantly beyond what can be economically mitigated.

- Land Use

  Land use impacts associated with this alternative could be significant. In order for this alternative to be viable, and not significantly impact existing and planned land use, trip reduction strategies would be required. Further, major changes in land use planning would be required in order to support enhanced trip reduction.

- Transportation/Circulation

  Additional segments along the Regionally Significant System would experience major (LOS) deficiencies resulting from implementation of the No Project Alternative. These impacts are considered significant given the amount of average daily traffic that is projected by 2035. Significant delay and congestion well beyond the traffic capacity of these segments would be realized resulting in significant environmental and economic impacts beyond those identified in the Preferred Project Alternative. State highway segments projected to fall to LOS “E” or "F" and local agency segments projected to fall to LOS “E” or “F” under this projected alternative are identified in the 2007 RTP, Amendment #2.

  In addition to street and highway impacts, major impacts upon other modes of transportation would also be realized. Without implementation of additional mass transportation, aviation, non-motorized, and goods movement improvements that would be facilitated by funding identified in the 2011 RTP, the transportation/circulation system will continue to rely on automobiles with transit primarily available for the transit dependant. These impacts would further reduce the ability of agencies in Kern County and the associated Air Basins to meet air quality standards and improve levels of congestion and delay.

VMT Reduction Project Alternative

This Project Alternative would focus on reducing VMT and vehicle trips (VT) through enhanced improvements in transportation control measures (TCMs) including rail, transit, and others, beyond that considered by the Project. Specifically, this alternative involves additional "mode shift" activities that focus on lessening the use of the single-occupant vehicle (SOV) to "enhanced" alternative forms of transportation. Therefore, this alternative would require either a shift in transportation funds from streets and highways to further enhance the implementation and/or development of alternative transportation modes and TCMs necessary to achieve VMT and VT targets/budgets. How much VMT and VT to reduce has been determined during the Conformity Analysis and considering VMT and VT

targets/budgets for specific years provided by the California Air Resources Board (CARB) and San Joaquin Valley Air Pollution Control District (SJVAPCD).

Impact 4.2.3

- Air Quality

  In addition to this Alternative's considerable emphasis on trip reduction strategies and alternative forms of transportation to reduce VMT and VT, mechanisms must be in place to ensure that the targets/budgets are achieved. This goal may only be possible if changes in land use planning practices are made by local jurisdictions. Such changes may include the provision for increased densities along major transportation corridors; provisions for "mixed-use" developments that would result in a "jobs to housing balance"; and the appropriate phasing of different types of development projects to ensure that a "jobs to housing balance" can be achieved.

  To assist local agencies in addressing air quality concerns during the planning process, the SJVAPCD has prepared the Air Quality Guidelines for General Plans. The SJVAPCD Governing Board adopted the Guidelines on August 20, 1998. The Guidelines provide a resource to local agencies that they can use to implement local air quality programs. The Guidelines also contain a number of goals, objectives, and policies designed to lessen air quality impacts from mobile, area, stationary, and indirect sources.

  Based on results of the Air Quality Assessment, documented in Section 3, major adjustments to the planned multi-modal transportation system will not be necessary. Further, because the projects contained in the 2011 RTP must be financially constrained, enhancing the provision of alternative modes of transportation, beyond those improvements included in those documents, will not be possible.

  Air quality is also expected to worsen if planned streets and highway projects are not implemented beyond the STIP period, even considering a major shift to enhanced alternative modes of transportation. Referencing Section 3, the planned street and highway projects are benefiting air quality over time because the projects are expected to significantly reduce delay and congestion. A major shift to alternative forms of transportation, beyond that included in the preferred Project alternative, would not be expected to capture all the trips that would be affected. The result would be significant delay and congestion and therefore significant air quality impacts.

- Noise

  Noise impacts are considered significant under this Alternative. With additional emphasis placed on mass transit, congestion levels along the major streets and roads within the region will increase resulting in increased noise levels. Streets and highways would not be widened due to lack of funding. Further, under this alternative, funding would be provided for a higher level of mass transit projects. The noise impacts related to additional increases in funding to mass transportation projects will be significant.

- Land Use

  This alternative could also have three types of land use impacts: changes in land use patterns, loss of existing or future land uses to expanded rights-of-way, and impacts associated with compatibility of transit and rail improvements to adjacent land uses.

- Transportation/Circulation

  While it could be argued that project funding for street and highway improvements under SAFETEA-LU could be applied to enhance alternative forms of transportation instead, the amount of funding would not be sufficient enough to significantly reduce trips along the regionally significant streets and highways to a level that would "off-set" major level of service (LOS) deficiencies. In other words, if a further shift in funding from streets and highways to other modes of transportation was accommodated, it is expected that LOS deficiencies would increase, not decrease. This assumption is based upon studies and findings made by other regional agencies with the ability to provide for mode-split analysis. Kern COG and Fresno COG both have the ability to conduct a mode split analysis.

  In addition, initial modeling conducted by Kern COG indicates that a dedicated bus lane Bus Rapid Transit (BRT) route would only carry 430 of the 600 daily boardings needed by 2035 to meet the 20% operating farebox subsidy requirements [not including right-of-way and equipment costs for the dedicated Bus/High Occupancy Vehicle (HOV) lane]. Kern COG has completed the illustration, which can be found on Page 4-82 of the RTP. There may be opportunities to optimize the system to increase ridership in the future; possibly adding parking costs, alternative land use, and other strategies as a part of Kern COG's Metropolitan Bakersfield Long Range Transit Study scheduled for completion in 2012. For now, an enhanced transit option that reduces VMT and vehicle trips does not appear to be financially feasible without a new transit operating funding source (such as was in the failed 2008 Sales Tax Measure or adding a transit component to the Metro Transportation Impact Fee).

4.3 ENVIRONMENTALLY PREFERRED ALTERNATIVE

Based on the analysis and results described in Section 3, the preferred alternative is the implementation of the 2011 RTP. This alternative was analyzed considering historical growth rates in VMT and VT, as well as anticipated growth in the use of other forms of transportation such as transit, rail, aviation, and non-motorized. Identification of TCMs, necessary to achieve positive air quality conformity findings, has also been evaluated as part of this alternative.

Improvement projects evaluated and identified under this alternative are "financially constrained" in accordance with the SAFETEA-LU and Air Quality Conformity requirements. This alternative focuses on "traditional" land use planning activities, i.e., designation of planned growth and development consistent with established land use density policies identified in the County General Plan and in local city General Plans.

The Project is considered the "Environmentally Preferred Alternative" because it is feasible, will reduce air pollution, and will provide for improvements consistent with the 2011 RTP Policy and Financial Elements. These improvements are generally located along existing transportation corridors and/or existing rights-of-way. Therefore, impacts are expected to be less significant compared to other project alternatives that will require increased funding and potentially create new transportation corridors in developed and undeveloped areas.

5.0 LONG-TERM EFFECTS

Section 15126.2 of the *CEQA Guidelines* requires that EIRs identify four types of impacts:

- The significant environmental effects of the project;
- Significant effects of the project which cannot be avoided if the project is implemented;
- Significant irreversible environmental changes which would be caused by the project; and
- The growth inducing impacts of the project.

Section 15130(a) requires an EIR to provide a discussion of significant cumulative impacts of a project when the project's incremental effect is cumulatively considerable.

The significant effects of the Project were identified in Section 4 of this SEIR, which identifies the unavoidable impacts, irreversible environmental changes, growth inducing impacts, and cumulative effects of the Project.

5.1 SIGNIFICANT UNAVOIDABLE ENVIRONMENTAL CHANGES

Significant unavoidable environmental changes would result from any of the individual improvement projects under the Preferred Project Alternative where construction of such projects would use non-renewable resources in such a way that reversing the impact of Project implementation is not possible. CEQA Section 15126.2(b) requires a discussion of any significant impacts that cannot be reduced to levels of insignificance. Although mitigation measures have been identified for all of the significant impacts of the proposed Project, where feasible, the projects and programs contained in the 2011 RTP would result in the following impacts that are significant and unavoidable even after implementation of the identified mitigation measures:

- Blocked or impeded scenic resources as seen from the transportation facility or from the surrounding area;
- Altered appearance of scenic resources along or near designated or eligible scenic highways and/or vista points;
- Creation of significant contrasts with the overall visual character of the existing landscape setting;
- New source of substantial light and glare;
- Land use and growth may occur in areas not previously envisioned for growth and development (agricultural areas);
- Increased emissions during the planning period for the Project;
- Degradation or removal of natural vegetation and wildlife habitat during construction activities;
- Displacement or removal of riparian or wetland habitat during construction and operation of improvement projects;
- Displacement or removal of riparian or wetland habitat during construction and operation of improvement projects as a result of edge effects;
- Temporary or permanent impacts to terrestrial and aquatic wildlife movements;
- Potentially increase siltation of screens and other water resources from exposures of erodible soils during construction activities;
- Indirect cumulative effect on biological resources;
- Cumulative Greenhouse Gas Emissions (GHG) impact;
- Impacts on cultural and historical sources resulting from increased construction activities;
- Excavation and earthmoving activities may encounter previously unknown archaeological resources or paleontological materials;
- Cumulative regional impacts on existing cultural and historical resources;
- Increased slope failure;

- Long-term erosion impacts;
- Impact along alignments of state owned and state mineral-reserve land;
- Cumulative regional impacts on geologic resources;
- Create a hazard to the public or environment thru the release of hazardous materials during transportation
- Cumulative regional impact on water quality, stormwater infiltration, groundwater recharge, flood hazard, wastewater treatment service, and water demand;
- Impacts on land use patterns, potentially causing land use growth and development to occur in areas not previously envisioned for growth and development;
- Sensitive receptors located in the urban and rural areas of the Kern region including residences, educational facilities, medical facilities and places of worship. Construction and implementation of the proposed highway and arterial improvements and transit facilities would impact sensitive receptors located in the vicinities of the individual improvement projects;
- Loss of open space areas;
- Disturbance or loss of significant agricultural resources throughout the Kern region;
- Cumulative regional impacts on existing and planned land use;
- Noise impacts resulting from construction and grading activities;
- Exposure to noise for noise-sensitive land uses in excess of normally acceptable noise levels or substantial increases in noise;
- Cumulative regional impacts on ambient noise levels;
- Displaced or relocated residences and businesses through acquisition of land and buildings necessary for roadway improvement;
- Disrupted or divided communities by separating community facilities, restricting community access and eliminating community amenities;
- Cumulative regional impact to population, housing and employment;
- Cumulative regional impact on public utilities, other utilities and services systems; and
- Level of Service (LOS) deficiencies (LOS E and F conditions) and congestion along the regionally significant road system.

5.2 SIGNIFICANT IRREVERSIBLE IMPACTS

Identification of irreversible impacts is required in Section 15126.2(c) of the CEQA Guidelines. This section states:

> *Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts, and particularly secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. In addition, irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that current consumption is justified.*

CEQA Section 15126.2(c) requires a discussion of any significant impacts that cannot be reduced to levels of insignificance. Although mitigation measures have been identified, where feasible, for all of the significant impacts of the proposed Project, the Plans would result in the following impacts that are significant and irreversible even after implementation of available, feasible mitigation measures:

- Blocked or impeded scenic resources as seen from the transportation facility or from the surrounding area;
- Altered appearance of scenic resources along or near designated or eligible scenic highways and/or vista points;
- Creation of significant contrasts with the overall visual character of the existing landscape setting;

- New source of substantial light and glare;
- Land use and growth may occur in areas not previously envisioned for growth and development (agricultural areas);
- Increased emissions during the planning period for the Project;
- Degradation or removal of natural vegetation and wildlife habitat during construction activities;
- Displacement or removal of riparian or wetland habitat during construction and operation of improvement projects;
- Displacement or removal of riparian or wetland habitat during construction and operation of improvement projects as a result of edge effects;
- Temporary or permanent impacts to terrestrial and aquatic wildlife movements;
- Potentially increase siltation of screens and other water resources from exposures of erodible soils during construction activities;
- Indirect cumulative effect on biological resources;
- Cumulative Greenhouse Gas Emissions (GHG) impact;
- Impacts on cultural and historical sources resulting from increased construction activities;
- Excavation and earthmoving activities may encounter previously unknown archaeological resources or paleontological materials;
- Cumulative regional impacts on existing cultural and historical resources;
- Increased slope failure;
- Long-term erosion impacts;
- Impact along alignments of state owned and state mineral-reserve land;
- Cumulative regional impacts on geologic resources;
- Create a hazard to the public or environment thru the release of hazardous materials during transportation
- Cumulative regional impact on water quality, stormwater infiltration, groundwater recharge, flood hazard, wastewater treatment service, and water demand;
- Impacts on land use patterns, potentially causing land use growth and development to occur in areas not previously envisioned for growth and development;
- Sensitive receptors located in the urban and rural areas of the Kern region including residences, educational facilities, medical facilities and places of worship. Construction and implementation of the proposed highway and arterial improvements and transit facilities would impact sensitive receptors located in the vicinities of the individual improvement projects;
- Loss of open space areas;
- Disturbance or loss of significant agricultural resources throughout the Kern region;
- Cumulative regional impacts on existing and planned land use;
- Noise impacts resulting from construction and grading activities;
- Exposure to noise for noise-sensitive land uses in excess of normally acceptable noise levels or substantial increases in noise;
- Cumulative regional impacts on ambient noise levels;
- Displaced or relocated residences and businesses through acquisition of land and buildings necessary for roadway improvement;
- Disrupted or divided communities by separating community facilities, restricting community access and eliminating community amenities;
- Cumulative regional impact to population, housing and employment;
- Cumulative regional impact on public utilities, other utilities and services systems; and
- Level of Service (LOS) deficiencies (LOS E and F conditions) and congestion along the regionally significant road system.

5.3 GROWTH INDUCING IMPACTS

According to Section 15126.2(d) of the CEQA Guidelines, an EIR is required to evaluate potential growth-inducing impacts of a proposed project. The Guidelines define growth-inducing impacts as "the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment." CEQA also requires the analysis of project characteristics that may encourage and facilitate activities that could individually or cumulatively affect the environment. Growth inducement, therefore, is any growth that exceeds planned growth of an area and results in new development that would not have taken place without the implementation of the proposed project. The growth-inducing potential of a project would be considered significant if it results in growth or a population concentration that exceeds growth forecasts included in general plans, other land use plans, or projections made by regional planning agencies. Environmental effects of induced growth are indirect impacts of the proposed project. Such effects could result in significant, adverse environmental impacts that could include increased demand on public services, increased traffic and/or noise, degradation of air and/or water quality, and conversion of agricultural land and open space to other uses.

Population and employment growth that Kern County has experienced in the past is expected to continue. The Project, in and of itself, is not expected to incur any growth inducing impacts in the region. It is assumed that the region will grow at the same rate, regardless of whether or not the Project is implemented. Specifically, population in Kern County is expected to increase by approximately 56% regardless of the Project. The region's population will grow from approximately 845,600, people to approximately 1.32 million by 2035 (reference the Population and Housing discussion in Section 3 for further clarification). Construction projects within the County will be subject to further CEQA review and evaluation of growth inducing impacts, but, as mentioned above, the Project, in and of itself, is not anticipated to have any growth inducing impacts.

5.4 CUMULATIVE IMPACTS

Cumulative effects, are defined as "two or more individual affects that, when considered together, are considerable or which compound or increase other environmental impacts." The cumulative impact from several projects results from the incremental impacts of the proposed project when added to other closely related past, present, and reasonably foreseeable future projects (CEQA Guidelines, Section 15255). The purpose of this section is to provide a discussion of significant cumulative impacts resulting from the Project, and to indicate the severity of the impacts and their likelihood of occurrence (CEQA Guidelines Sections 15130(a) and (b)). CEQA Guidelines require that EIRs discuss cumulative impacts of a project when a project's incremental effect is "cumulatively considerable," meaning that a project's incremental effects are considerable when viewed in connection with effects of past, current, and probable future projects.

As a regional planning and financing project, the Project would regionally affect development in the same way as other regional planning and financing projects, such as city and county general plans and master plans of water and sanitation agencies. As such, the Project could have the following cumulative effects:

- Blocked or impeded scenic resources as seen from the transportation facility or from the surrounding area;
- Altered appearance of scenic resources along or near designated or eligible scenic highways and/or vista points;
- Creation of significant contrasts with the overall visual character of the existing landscape setting;
- New source of substantial light and glare;
- Land use and growth may occur in areas not previously envisioned for growth and development (agricultural areas);
- Increased emissions during the planning period for the Project;
- Degradation or removal of natural vegetation and wildlife habitat during construction activities;

- Displacement or removal of riparian or wetland habitat during construction and operation of improvement projects;
- Displacement or removal of riparian or wetland habitat during construction and operation of improvement projects as a result of edge effects;
- Temporary or permanent impacts to terrestrial and aquatic wildlife movements;
- Potentially increase siltation of screens and other water resources from exposures of erodible soils during construction activities;
- Indirect cumulative effect on biological resources;
- Cumulative Greenhouse Gas Emissions (GHG) impact;
- Impacts on cultural and historical sources resulting from increased construction activities;
- Excavation and earthmoving activities may encounter previously unknown archaeological resources or paleontological materials;
- Cumulative regional impacts on existing cultural and historical resources;
- Increased slope failure;
- Long-term erosion impacts;
- Impact along alignments of state owned and state mineral-reserve land;
- Cumulative regional impacts on geologic resources;
- Create a hazard to the public or environment thru the release of hazardous materials during transportation;
- Cumulative regional impact on water quality, stormwater infiltration, groundwater recharge, flood hazard, wastewater treatment service, and water demand;
- Impacts on land use patterns, potentially causing land use growth and development to occur in areas not previously envisioned for growth and development;
- Sensitive receptors located in the urban and rural areas of the Kern region including residences, educational facilities, medical facilities and places of worship. Construction and implementation of the proposed highway and arterial improvements and transit facilities would impact sensitive receptors located in the vicinities of the individual improvement projects;
- Loss of open space areas;
- Disturbance or loss of significant agricultural resources throughout the Kern region;
- Cumulative regional impacts on existing and planned land use;
- Noise impacts resulting from construction and grading activities;
- Exposure to noise for noise-sensitive land uses in excess of normally acceptable noise levels or substantial increases in noise;
- Cumulative regional impacts on ambient noise levels;
- Displaced or relocated residences and businesses through acquisition of land and buildings necessary for roadway improvement;
- Disrupted or divided communities by separating community facilities, restricting community access and eliminating community amenities;
- Cumulative regional impact to population, housing and employment;
- Cumulative regional impact on public utilities, other utilities and services systems; and
- Level of Service (LOS) deficiencies (LOS E and F conditions) and congestion along the regionally significant road system.

6.0 LIST OF PREPARERS, ORGANIZATIONS, AND AGENCIES REFERENCED OR CONSULTED

6.1 LIST OF PREPARERS

The following provides a list of firms and staff members involved in the preparation process of this document:

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6.2 ORGANIZATIONS AND AGENCIES REFERENCED OR CONSULTED

The following provides a list of organizations and agencies referenced or consulted during preparation of this SEIR:

AMTRAK
Antelope Valley-East Kern Water Agency
Burlington, Northern and Santa Fe Railroad
California Air Resources Board
California Building Standards Commission, (CBSC)
California Department of Conservation
California Department of Finance
California Department of Fish and Game
California Department of Forestry and Fire Protection
California Department of Health Services
California Department of Parks and Recreation
California Department of Transportation (Caltrans)
California Department of Water Resources
California Division of Oil, Gas and Geothermal Resources
California Division of Mines and Geology
California Employment Development Department
California Energy Commission

California Environmental Protection Agency
California Gas Utilities
California Governor's Office of Planning and Research
California Historical Resources Commission
California Integrated Waste Management Board
California Native American Heritage Commission
California Office of Environmental Health
California Office of Historic Preservation
California Regional Water Quality Control Board
California State University, Bakersfield
California State Water Resources Control Board
California Transportation Commission
City of Bakersfield
County of Kern
Delta Water Agency
Delta Water Commission
Federal Emergency Management Agency
Federal Highway Administration
Federal Transit Administration
Golden Empire Transit
Governor's Office of Planning and Research
Greyhound Bus Lines
Institute of Transportation Engineers
Kern Council of Governments (Kern COG)
Kern County (Various Departments)
Kern County Air Pollution Control District
Kern County Airport Land Use Commission
Kern County Department of Airports
Kern County LAFCO
Kern County Resource Management Agency
Kern County Waste Management Department
Kern Regional Transit
Mojave Desert Air Quality Management District
National Park Service
National Forest Service
National Transportation Safety Board
Orange Belt Stages
Pacific Gas and Electric (PG&E)
Regional Water Quality Control Board, Central Valley Region
San Joaquin Valley Air Pollution Control District
San Joaquin Valley Railroad
Southern California Edison
Southern California Gas (SOCAL Gas)
Transportation Research Board
Union Pacific Transportation Company
United States Army Corps of Engineers
United States Aviation Administration
United States Bureau of the Census
United States Department of Interior, Bureau of Land Management
United States Department of Agriculture, Natural Resource Conservation Service (NRCS)

United States Department of Energy, Energy Information Administration
United States Department of the Interior, Fish and Wildlife Service
United States Department of Transportation
United States Department of Housing and Urban Development
United States Environmental Protection Agency
United States Fish and Wildlife Service
United States Geological Survey
VRPA Technologies, Inc.

7.0 WRITTEN COMMENTS AND FINAL RESPONSES TO COMMENTS

(*Comments received are provided beginning on Page 7-9)*

FROM: Scott Morgan, Acting Director, State Clearinghouse

DATED: June 16, 2010

RESPONSE #1: No comments regarding the Draft Subsequent Environmental Impact Report (SEIR) were received by the State Clearinghouse from State agencies.

FROM: Chris Ganson, Environmental Review Office, United States Environmental Protection Agency, Region IX

DATED: June 21, 2010

RESPONSE #2: Thank you for your comments regarding the 2011 RTP and its Draft SEIR. Kern COG finds the EPA's recommendations and guidance most helpful. As noted in the EPA letter, the comments provided will be incorporated when Kern COG begins its 2014 RTP that will comply with the new federal surface transportation act, as well as State requirements from AB 32 and SB 375.

The 2011 RTP incorporates most of the recommendations made. For example, with this update, Kern COG has incorporated the Caltrans' *Smart Mobility Framework* in the RTP's performance measure section of Chapter 2.

Further, staff agrees with EPA's request to "expand discussion of impacts to critical habitat areas and connect it to a broader regional mitigation strategy in the RTP" and incorporated EPA's recommendations as mitigation measures in Chapter 8 of this Final SEIR (titled Changes to the Draft SEIR).

Finally, the Draft SEIR contains information regarding the use of available data used to inform regional transportation planning decisions. The Draft SEIR provides a detailed description of data sources and information available to identify potential natural or historic resource impacts, as well as appropriate mitigation measures to address impacts associated with the short- and long-range improvement projects to be implemented by various state, local, and other agencies. The SEIR is incorporated in the 2011 RTP by reference. In addition, the specific references to each data source listed in the comment letter, which was not included in the Draft SEIR, has been included in Chapter 8 of the Final SEIR (titled Changes to the Draft SEIR) including U.S. Fish & Wildlife Service's species recovery plans, the USDA Natural Resources Conservation Service wetland data, the Nature Conservancy data and regional planning document, and local non-profit and land trust group information.

FROM: Bill Pfanner, Supervisor, Local Energy & Land Use Assistance Unit, Special Projects Office, Fuels & Transportation Division, California Energy Commission

DATED: May 13, 2010

RESPONSE #3: While the 2011 SEIR Notice of Preparation did not indicate expected Energy and Energy Conservation impacts that would result from the 2011 Regional Transportation Plan, potential impacts and mitigation measures to fully address such impacts have been incorporated in Chapter 8 of this Final SEIR (Changes to the Draft SEIR) to ensure compliance with Appendix F of CEQA. Further, energy impacts associated with the 2011 RTP are not expected to be greater than other project alternatives analyzed in the Draft SEIR. Finally, remaining significant effects are not expected and overriding considerations and findings will not be required.

FROM: Eugene S. Wilson, California Clean Energy Committee

DATED: June 10, 2010

RESPONSE #4: Thank you for your comments regarding the 2011 Regional Transportation Plan and its Draft SEIR. We are responding paragraph-by-paragraph, as numbered on the attached copy of your letter.

Paragraphs 1 through 5 require no response.

Paragraph 6. The 2011 Regional Transportation Plan (RTP) is a program level document, which is reflected in the level of analysis provided in its SEIR. Hence, project-level analysis and discussion are not provided and project life cycle analysis would not be appropriate. The document does provide annual numbers for climate change emissions, and cumulative analysis has been prepared. The transportation modeling undertaken for this programmatic plan combines projects using a cumulative analysis for the year 2035. This cumulative analysis looks at some of the life cycle variables, including congestion. Many of the projects planned to be built more than 10 years out are not well defined, making a detail lifecycle analysis not possible. In addition, many of the lifecycle issue that you suggest we review are one time episodic releases of CO_2 and account for a relatively small fraction of the overall CO_2 emissions accounted for in the cumulative analysis. While project life cycle analysis can be done for individual projects, it is not suitable for this programmatic-level plan, which includes a wide variety of multi modal projects. It is also likely that some of the listed projects in Table 4-1 will have a life cycle horizon year beyond the horizon year of this plan (2035). In order to determine a lane mile of roadway, analysis of individual projects would be necessary. This will occur as individual projects are funded and individual agencies move forward to construction subsequent to preparation of the appropriate level of environmental analysis.

In response to this comment Kern COG has added the following mitigation to Chapter 8 of this Final SEIR (Changes to the Draft SEIR):

> "Project level environmental documents shall analyze construction and maintenance GHG emissions."

Paragraph 7. The Draft SEIR includes baseline emissions for greenhouse gas (GHG) and criteria pollutants in tables 3-3 to 3-5, and 3-11. The Draft SEIR incorporates the conformity analysis by reference. The budgets included in the conformity analysis are from the seven State Implementation Plans developed for criteria pollutants in Kern and are based on observed emissions inventories and air quality monitoring data. There is currently no monitoring data network for GHG. The air basin for GHG is global, so a global monitoring network and emissions inventory would be required to accurately assess the impacts of GHG.

Paragraph 8. While analysis of per capita GHG emissions is a CARB Regional Targets Advisory Committee recommendation for passenger vehicle emission, no other regulatory agency requires this analysis at this time, nor is it available. In addition, the GHG analysis includes emissions from heavy duty trucks which are not a part of the SB 375 per capita requirement. Kern COG will comply with SB 375 targets when they become available; this discussion will be included in 2014 RTP in keeping with the established timeframe for SB 375.

Paragraph 9. The GHG analysis was prepared as part of the cumulative analysis, as provided in Table 3-12 of the Draft SEIR and reflected in the projects from Table 4-1 of the RTP. The air quality model used to predict emissions rates of the criteria pollutants (EMFAC) is capable of modeling the emissions of CO_2, and Kern COG analyzed CO_2 emissions resulting from the 2011 RTP. Even though the total VMT increased, the 2011 RTP results in a reduction of CO_2 emissions and would represent an improvement over the No Project Alternative as shown in Table 3-12 of the Draft SEIR. The improvement in operations compared to the No Build Alternative, particularly higher speed and reduced vehicle hours traveled (VHT), has a beneficial cumulative impact on CO_2 emissions because of improved traffic flow, resulting in more efficient vehicle operation, which is consistent with the results for the analysis of the other criteria pollutants. The 2011 RTP would result in a positive cumulative effect on the reduction of CO_2 levels and would not require mitigation.

Paragraph 10. Significance threshold for passenger vehicle related GHG emissions are currently being established by CARB as part of the SB 375 process, and should be set by September 30, 2010 which is beyond the required date to update the Kern RTP. The significance threshold for GHG emissions will be discussed in Kern COG's 2014 document. The California Air Resources Board (CARB) Scoping Plan indicates the "possible" impacts of land use and transportation policies, referencing a 2008 U.C. Berkeley study that reviewed land use/transportation modeling studies from California, other states, and Europe. That study found a range of between 0.4 and 7.7 percent reduction in vehicle miles traveled (VMT) resulting from a combination of land use and enhanced transit policies compared to "business as usual". The Scoping Plan indicated that the range of VMT reductions resulted in a 4 percent median value. The Scoping Plan specifically states, "This value should not be interpreted as the final estimate of the benefits of this measure….The benefit will be determined as an outcome of SB 375". Kern COG is currently developing plans and policies to address SB 375 requirements, which will be incorporated as part of the 2014 RTP.

Paragraph 11. See discussion provided in response to Paragraph 9. Climate change impacts were discussed within the 2011 RTP and its Draft SEIR as well as the Conformity

determination. Currently, metropolitan Bakersfield's transit provider (Golden Empire Transit or GET) is preparing a Long Range Transit Study, which will be implemented over the next 5 to 20 years and will strongly influence where and how travel occurs. From a cumulative perspective, the impact of the RTP on where and how travel occurs is reflected in the difference between the Build and No Build Alternatives as provided in Table 3-12 of the Draft SEIR. Also in the Draft SEIR is a lengthy list of feasible mitigation measures, though individual measures will be determined on a project by project basis. Note, starting on page 3-91 of the Draft SEIR, the mitigation measures provided for Impacts 3.5.1 and 3.5.2. However, some mitigation measures cannot be quantified because the necessary tools to do so are not currently available. The California Air Resources Board (CARB) is in the process of identifying a qualitative methodology to assess beneficial impacts of the various listed mitigation measures as part of the SB 375 process. Still others require assessment at the individual project level. Kern COG cannot quantify what the individual impacts will be to the complete RTP Program of Projects because it contains a full array of alternative mode projects. The Transportation Control Measures action element beginning on p. 4-65 of the RTP includes a detailed discussion of control measures that have been considered or are under consideration in the region. Based on cumulative analysis, Kern County is meeting its required federal air quality standards. Climate change standards for passenger vehicles have yet to be set by CARB. Kern COG has analyzed Build and No Build alternatives. The Plan reduces GHG when compared to the No Build alternative. Additional mitigation measures, as they are implemented, will help the region exceed analyzed benefits.

Paragraph 12. Kern County must expand road capacity in order to provide for improved transit systems, as well as bicyclists, and other non-motorized modes, not just to provide capacity for single-occupant vehicles (SOVs). An update to the Kern County Bicycle Plan is currently under preparation. In addition, initial modeling conducted by Kern COG indicates that a dedicated bus lane for Bus Rapid Transit (BRT) would only carry 430 of the 600 daily boardings needed by 2035 to meet the 20 percent operating farebox subsidy requirements (not including right-of-way and equipment costs for the dedicated Bus/High Occupancy Vehicle (HOV) lane. Opportunities may arise to optimize the system and increase ridership in the future, possibly adding parking costs, alternative land uses, and other strategies as part of Kern COG's Metropolitan Bakersfield Long Range Transit Study scheduled for completion in 2012. For now, an enhanced transit option that reduces VMT and vehicle trips does not appear to be financially feasible without a new transit operating funding source.

Paragraph 13. See response provided for Paragraph 9. Kern COG has quantified GHG emissions for the region as provided on page 3-90 of the Draft SEIR. Kern COG does have experience in modeling sprawl impacts and along with the other seven San Joaquin Valley COGS is reviewing a wide variety of tools to estimate sprawl impacts. An appropriate tool will be selected for use in the 2014 RTP. Nevertheless, the 2011 RTP incorporates principles from the Kern Regional Blueprint that were developed based on the agency's modeling of sprawl impacts and extensive public input. Tools used included UPLAN and EMFAC and spreadsheet-based methodologies.

Paragraph 14. The Climate Change Section 3.5 of the Draft SEIR does identify feasible mitigation strategies, some of which include those listed in the California Clean Energy

Committee's comment letter. However, some strategies are not appropriate for the Kern region because of its unique mix of urban and rural forms.

Paragraph 15. See response provided for Paragraph 13.

Paragraph 16. As described in the response to Paragraph 9, the Build / No Build analysis is incorporated. The methodology used includes a transportation model with a feedback loop that includes the mode choice step to simulate induced traffic demand for each scenario analyzed. Page 4-69 of the RTP includes a list of TCMs considered by projects in the Metropolitan Bakersfield area. Some projects have considered increased parking cost for the central business district locations as an option. Other TCMs considered include carpooling, flextime, transit subsidies, park and rides, increased funding for transit and high occupancy vehicle lanes. At least one major transportation facility includes room to accommodate an HOV lane that could become part of a future congestion pricing study.

Page 4-110 of the RTP includes a new requirement for a Deficiency Plans or Corridor System Management Plan (CSMP) as part of the Congestion Management Program. The CSMP is required to look at: multimodal analysis, corridor analysis, multimodal circulation plans, funding mitigation, and congestion pricing in corridors that are currently worse than Level of Service E.

Paragraph 17. See previous comment. In 1997, Kern COG completed the Metropolitan Bakersfield Major Transportation Investment Strategy (MTIS). The MTIS was jointly conducted by the following agencies:

- City of Bakersfield
- County of Kern
- Golden Empire Transit
- Kern CO;
- Caltrans, District 6, and
- San Joaquin Valley Unified Air Pollution Control District.

The strategy developed by the participating agencies contained eight components, including land use. The land use planning component encourages mixed-use, infill, and other balanced land development to minimize concomitant vehicular traffic increases. Developer incentives for mixed-use and infill have been instituted. Large developments proposed as an amendment to the metropolitan Bakersfield General Plan trigger the requirement for a traffic impact analysis that uses the Kern COG regional transportation model. Developments with a balanced mix of residential income housing and commercial/industrial will show less of an impact than strictly residential development, thereby reducing the traffic impact fee that a development must pay.

To encourage infill development, the City of Bakersfield and the County of Kern have jointly adopted a two-tiered traffic impact fee for metropolitan Bakersfield. The fee is half of the $12,000 per house fee in the "core area" of Bakersfield. The core area is primarily the older "built out" portions of the community that have the infrastructure in place. The logic behind the lower core area fee is that housing in these areas should not have to pay as high a fee because the transportation infrastructure is already in place. The result is a

fee structure that promotes infill and increased densities in areas with readily available bus transit and pedestrian access.

The MTIS also looked at light and heavy rail. The study indicated that even with an optimistic growth rate, light rail would not be viable in metropolitan Bakersfield before 2014. However, as the land use program is implemented, densities could eventually provide enough infill to support such a system. In addition, the MTIS developed a sketch plan for a heavy commuter rail network connecting Metro Bakersfield to outlying communities. The development of a feeder rail network using existing spur lines in support of a high-speed rail connection to Los Angeles and San Francisco is being studied now that funding has been be approved for the proposed high-speed rail system. The viability of either system is dependent on a pattern of development that is much denser than is being implemented currently. Land use development patterns should include dense, pedestrian-oriented future transit hubs that could support viable alternatives to single occupancy vehicle travel. The MTIS concluded that, for the near term, multimodal transportation investment should focus on increasing and expanding the existing bus service. This strategy has the added potential of one day providing a feeder network that would increase the viability of other modes such as pedestrian, bike and rail service.

In 2009 as part of the RTP update Kern COG analyzed an updated version of the MTIS light rail scenario substituting the rail corridor with a Bus Rapid Transit (BRT) System. Section 4.2.3 of the Draft SEIR summarizes the analysis. The corridor still lacked the ridership necessary to recover the required farebox ratio to viably operate the system. GET is working on a Long Range Transit Study update to the MTIS and will look at alternatives to improve the viability of BRT and Light Rail.

Paragraph 18. The 2011 RTP provides for multimodal projects, rather than simply a road improvement program. Kern COG's transportation modeling process uses all of Kern communities' general plans. Such strategies as parking pricing or shifting funding to other modes such as transit, bicycling and walking will be considered. Kern COG has modeled parking pricing along with a mix of transit. See the response to paragraphs 16 and 17 related to congestion pricing and multimodal analysis. In 2008 Kern COG adopted the Kern Regional Blueprint. The final report included a residential energy consumption analysis in the year 2050. The 2011 RTP now includes two rail goods movement infrastructure projects. Shipping goods by rail is 10 times more energy efficient than shipping by truck. Over the next few years Kern COG will be assessing all relevant strategies for reducing energy consumption and GHG emissions; these will be modeled and results will be incorporated as part of the 2014 RTP. However, it seems likely that congestion pricing would need to be implemented on a national level because of our high percentage of through-County trips (over 30% of our trips are pass-through).

Paragraph 19. While the 2011 SEIR Notice of Preparation did not indicate expected Energy and Energy Conservation impacts that would result from the 2011 RTP, potential impacts and mitigation measures to fully address such impacts will be incorporated in the Final SEIR to ensure compliance with Appendix F of CEQA Guidelines. Mitigation measures are already included in the Climate Change sector of the Draft SEIR that would also address energy conservation impacts. Energy impacts associated with the 2011 RTP are not expected to be greater than other project alternatives analyzed in the Draft

SEIR. Remaining significant effects are not expected and overriding considerations and findings will not be required.

Kern COG's Environmental Justice (EJ) analysis looked at the impact of urban transit service expenditures on EJ neighborhoods. The result was an indication that the current transit expenditure distribution aided EJ neighborhoods.

Paragraph 20. See response to Paragraph 4. The transportation model analysis for GHG emissions incorporates speeds that are input to EMFAC, which factors into estimates of projected GHG emissions. The majority of 55+ mph highway lane miles are under jurisdiction of the State of California, which would require statewide legislation to change. The majority of major arterials in Kern County under local jurisdiction is set at 45 mph or lower. For conformity purposes, 45 mph is the optimum speed. If speeds were to be lowered, problems with conformity would be encountered, impacting both CO and CO_2. In addition, Kern COG has dedicated funding to speed limit enforcement and traffic calming features.

Paragraph 21. The 2011 RTP provides a multimodal Program of Projects as identified in Table 4-1. Follow up analysis will occur with individual projects as local agencies move forward, and environmentally assess individual projects on a project by project basis. Many of the RTP's capacity increasing projects in rural areas are safety-related projects, rather than congestion- relieving. The same is true with maintenance and rehabilitation projects.

Paragraph 22. See response to Paragraph 4. Currently, CEQA does not require that the impacts of climate change on the transportation infrastructure be considered. However, mitigation measures for maintenance and rehabilitation projects will be implemented by local agencies and Caltrans as those projects are undertaken. Roadbeds will be improved to current standards, which are intended to address the flooding and erosion potential over the life of a project. Typically, projects have a 20 – 30 year life cycle.

Paragraph 23. Regarding the diversion of funds to alternative transportations creating unacceptable delays, congestion and air quality impacts, the analysis mentioned in paragraph 17 above shows that Metropolitan Bakersfield lacks the density to affordably run a Bus Rapid Transit or Light Rail System. Kern COG is instituting with this revision to the RTP, new requirements for looking at congestion pricing in currently congested areas as part of the Congestion Management Program, and a Long Range Transit Study is underway to develop a more viable alternative transportation system that could include parking pricing and other strategies including managed lanes. Kern COG has performed extensive system level analysis of Environmental Justice areas using the Caltrans Smart Mobility Framework. The current analysis demonstrates that transportation expenditures are benefitting environmental justice areas for both highway and transit expenditures. Increased energy costs are not localized and there for not included in the Environmental Justice analysis stratified by place type.

FROM: Bob Wren, Deputy Director of Public Works, City of Wasco

DATED: June 2, 2010

RESPONSE #5: There are two proposed sites for the Heavy Maintenance Facility. One is in Wasco and the other in Shafter. You can review the proposals on Kern COGs website at http://kerncog.org/cms/transportation/hsr. As for the status, both sites have been selected for the short-list. Final selection is scheduled for July 2011.

STATE OF CALIFORNIA
GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH
STATE CLEARINGHOUSE AND PLANNING UNIT

ARNOLD SCHWARZENEGGER
GOVERNOR

CYNTHIA BRYANT
DIRECTOR

June 16, 2010

RECEIVED
JUN 18 2010
KERN COUNCIL
OF GOVERNMENTS

Ms. Marilyn Beardslee
Kern Council of Governments
1401 19th Street, Suite 300
Bakersfield, CA 93301

Subject: 2011 Kern COG Regional Transportation Plan
SCH#: 2006111119

Dear Ms. Marilyn Beardslee:

The State Clearinghouse submitted the above named Draft EIR to selected state agencies for review. The review period closed on June 14, 2010, and no state agencies submitted comments by that date. This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. 1

Please call the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process. If you have a question about the above-named project, please refer to the ten-digit State Clearinghouse number when contacting this office.

Sincerely,

Scott Morgan
Acting Director, State Clearinghouse

1400 10th Street P.O. Box 3044 Sacramento, California 95812-3044
(916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

Document Details Report
State Clearinghouse Data Base

SCH# 2006111119
Project Title 2011 Kern COG Regional Transportation Plan
Lead Agency Kern Council of Governments

Type EIR Draft EIR
Description Preparation and approval of the 2011 Kern COG Regional Transportation Plan (RTP).

Lead Agency Contact

Name Ms. Marilyn Beardslee
Agency Kern Council of Governments
Phone (661) 861-2191 **Fax**
email
Address 1401 19th Street, Suite 300
City Bakersfield **State** CA **Zip** 93301

Project Location

County Kern
City Bakersfield
Region
Lat / Long
Cross Streets
Parcel No.
Township **Range** **Section** **Base**

Proximity to:

Highways
Airports
Railways
Waterways
Schools
Land Use Various

Project Issues Agricultural Land; Air Quality; Archaeologic-Historic; Drainage/Absorption; Flood Plain/Flooding; Geologic/Seismic; Minerals; Noise; Population/Housing Balance; Public Services; Recreation/Parks; Soil Erosion/Compaction/Grading; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Wetland/Riparian; Wildlife; Growth Inducing; Landuse; Cumulative Effects; Aesthetic/Visual

Reviewing Agencies Resources Agency; Department of Conservation; Department of Fish and Game, Region 4; Office of Historic Preservation; Department of Parks and Recreation; Department of Water Resources; California Highway Patrol; Caltrans, District 6; Air Resources Board, Transportation Projects; Regional Water Quality Control Bd., Region 5 (Fresno); Department of Toxic Substances Control; Native American Heritage Commission; Public Utilities Commission; State Lands Commission; Caltrans, District 3

Date Received 04/30/2010 **Start of Review** 04/30/2010 **End of Review** 06/14/2010

Note: Blanks in data fields result from insufficient information provided by lead agency.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

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

Subject: U.S. EPA Comments on the Kern Council of Governments (KCOG) Regional Transportation Plan and Draft Environmental Impact Report

2 – Entire Letter

Dear Ms. Beardslee:

The U.S. Environmental Protection Agency (EPA) appreciates the opportunity to provide comments on the Kern Council of Governments (KCOG) 2011 Draft Regional Transportation Plan (RTP) and Draft Environmental Impact Report (DEIR). EPA is committed to the goal of incorporating environmental considerations early in the transportation planning process. Early coordination results in greater opportunities to avoid sensitive resources and minimize impacts associated with future transportation projects.

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) directs metropolitan planning organizations (MPOs) to consult with resource agencies while developing long-range transportation plans. It also requires such plans to discuss potential environmental mitigation activities and potential locations for these activities to restore and maintain environmental functions that could be affected by the plan. While EPA did not complete a comprehensive review of the KCOG RTP, we provide the following comments in support of compliance with these requirements. While we understand some of the provided recommendations below may not be able to be incorporated into this RTP revision, we hope that the concepts and principles identified can be incorporated into the next RTP revision.

Delineate Robust Measures to Improve Air Quality through Travel Efficiency

Air quality in the San Joaquin Valley is among the poorest in the country, causing health and environmental impacts for its residents and costs to its economy totaling approximately $1600 per capita annually. The valley's geography and meteorology traps pollutants, so special attention must be given to reducing the amount of pollutants emitted. Transportation within the valley contributes a significant portion of these pollutants, and conversely reduction of vehicle travel can provide reductions for all pollutants. Reducing emissions from transportation is necessary to improving the valley's air quality. While improvements in fuel efficiency and

vehicle technology will contribute to a reduction in emissions, substantial focus on and investment in travel efficiency measures (e.g. smart growth and transportation demand management (TDM)) is also needed to further reduce emissions in the San Joaquin Valley.

Use the RTP Process to Spur Transportation Efficient Growth That Accomplishes Multiple Objectives

A regional transportation planning process provides an opportunity to focus growth and activity where it most benefits the region. Compact development built in infill locations shortens trip distances; transit-oriented development leads to a greater share of transit use; mixing of uses accomplishes both and also creates opportunities for active transportation modes. Such development patterns, and the transportation patterns they help create, in turn can create environmental and livability benefits. These concepts and others are included in Caltrans' recently completed *Smart Mobility 2010: A Call to Action for the New Decade.* In particular, EPA would like to call attention to its discussion of performance measures aimed at quantifying the benefits of integrated planning:

> Transportation performance measures forecast, evaluate, and monitor the degree to which the transportation system accomplishes adopted public goals and mobility objectives. Smart Mobility Performance Measures demonstrate the relationship between integrated transportation and land use decisions and the consequent effects on the full range of economic, social, and environmental conditions. (p. 50)

As detailed in the document, EPA recommends incorporation of carefully chosen performance measures to inform and guide planning efforts.

EPA, the US Department of Housing and Urban Development (HUD) and the US Department of Transportation (DOT) recently joined in a partnership to support measures to improve livability and sustainability. We encourage you to consider the principles identified through this partnership when working to integrate the regional blueprint concept into regional planning. More information on this partnership, including grant opportunities, can be found at http://www.epa.gov/smartgrowth/partnership/. Programs offered by the partnership, including funding opportunities, can be found at http://www.epa.gov/smartgrowth/pdf/2010_0506_leveraging_partnership.pdf.

Clarify in the RTP How the Ongoing Regional Blueprint Effort Influenced Any Current Design and Route Network Location Decisions.

EPA recognizes that San Joaquin Valley MPOs intend to apply the ongoing regional blueprint process to identify preferred growth scenarios for the future which will serve as the foundation for determining a Sustainable Community Strategy. EPA recommends that, from a regional perspective, the RTP identify how proposed transportation projects have been planned to (1) more efficiently use existing infrastructure, for example by incorporating intelligent transportation systems or improving transit service, rather than adding new infrastructure; (2) satisfy regional residents' need for efficient access to goods and services in the way that causes the least environmental and social harm; and (3) avoid and minimize harm to high quality resources and habitat. The RTP should also identify what design and route network location

A significant fraction of the built environment that will exist in the area affected by this RTP has yet to be built. Thus, significant opportunity exists to make substantial changes to land use development patterns. Because land use has significant direct influence on factors such as mode choice and average trip distance, and therefore indirect influence on factors such as air quality and greenhouse gas emissions, opportunity exists for significant change from current trends. EPA recommends including a discussion of estimates of the range of possibility with respect to these factors, and a discussion of the factors limiting these possibilities (e.g. funding, institutions).

EPA recognizes that MPOs do not have direct land use control. They can, however, facilitate local jurisdictions in the region, coordinating and building consensus through blueprint planning. A number of incentive programs are available to help fund such coordination (see attachment). Further, an MPO can use its role in transportation network planning to influence growth.

EPA recommends including discussion of both near-term transportation demand management strategies and more aggressive potential future solutions. While we recognize there may not be an opportunity to include a comprehensive discussion and analysis of these measures in this RTP update, we recommend expanding this discussion as feasible in this RTP with an eye toward the next RTP cycle. We recommend such a discussion focus primarily on opportunities and secondarily on constraints.

Discuss Impacts to Critical Habitat Areas and Connect It to a Broader Regional Mitigation Strategy in the RTP.

EPA strongly recommends avoiding biologically sensitive habitats when planning a regional transportation network. Where applicable open space plans, conservation areas, mitigation banks, conservation plans (such as Habitat Conservation Plans (HCPs) and Natural Community Conservation Planning programs), and high value resource areas should be identified and avoided at the regional transportation planning phase, rather than waiting until project implementation. Choices involving both roadway network placement and land use are decided or highly influenced by the regional transportation planning process and can have large implications for biologically sensitive areas.

The following are EPA's recommendations for biological and sensitive habitat mitigation:

- Use resource data to inform transportation decision-making.
- Use watershed, conservation, and recovery plans to identify important environmental considerations for the region, such as critical wildlife corridors, the most important areas to protect for sensitive species, and areas with a high concentration of resources.
- Give conservation plans as much weight as General Plans when planning transportation investments.

- Incorporate concepts such as 100 to 200 foot buffers for stream corridors, and identification and improvement of priority culverts that currently restrict wildlife corridors and natural processes of stream and river systems.
- Use parcel maps to identify larger, undivided parcels for ease of acquisition and preservation, and designate areas as potential future mitigation sites.
- Consider the resource, "Eco-logical: An Ecosystem Approach to Developing Infrastructure Projects" (2006)[1] which encourages Federal, State, Tribal and Local partners involved in infrastructure planning, design, review, and construction to use flexibility in regulatory processes. Specifically, Eco-Logical puts forth the conceptual groundwork for integrating plans across agency boundaries, and endorses ecosystem-based mitigation - an innovative method of mitigating infrastructure impacts that cannot be avoided.

The Regional Mitigation Strategy contained in the RTP should also establish the foundation for innovative regional mitigation solutions:

- Identify financial mechanisms to fund mitigation, such as development fees, sales tax, or the use of funds from alternative methods to identify and protect critical resource areas.
- Establish conservation easements that connect to and expand existing conservation areas.
- Describe locally-developed measures such as county/city designation of open-space, measures requiring development set-backs near streams, etc.

Describe the Use of Available Data to Inform Regional Transportation Planning Decisions.

SAFETEA-LU directs MPOs to compare transportation plans with other plans, maps, and data of inventories of natural or historic resources, if available. The RTP should therefore include a discussion of other data, plans, or maps that may be useful to inform long-range transportation planning. EPA recommends that the RTP specifically describe how the proposed transportation network has been designed to avoid resources identified in data sources such as those identified below:

- U.S. Fish & Wildlife Service species recovery plans
- USDA Natural Resources Conservation Service wetland data
- Nature Conservancy data and regional planning documents
- California Department of Fish and Game Natural Diversity Database
- Local non-profit and land trust group information

[1] Eco-logical is available on-line at: http://www.environment.fhwa.dot.gov/ecological/eco_index.asp. Information on pilots using Eco-logical principals is available on-line at: http://www.trb.org/StrategicHighwayResearchProgram2SHRP2/Public/Pages/capacitypilottests_334.aspx .

EPA values the opportunity to be involved in the regional transportation planning process. When the final RTP and EIR are available, please send a copy of each to the address above (mail code CED-2). If you have any questions about our comments, please contact me at 415-947-4121 or ganson.chris@epa.gov.

Sincerely,

Chris Ganson
Environmental Review Office

Enclosure: Leveraging the Partnership: DOT, HUD, and EPA Programs for Sustainable Communities

cc: Garth Hopkins, Caltrans Headquarters
Christine Cox-Kovacevich, Caltrans Central Region
Aimee Kratovil, Federal Highway Administration
Eric Eidlin, Federal Transit Administration
Roberta Gerson, US Fish and Wildlife Service

STATE OF CALIFORNIA – NATURAL RESOURCES AGENCY ARNOLD SCHWARZENEGGER, *Governor*

CALIFORNIA ENERGY COMMISSION
1516 NINTH STREET
SACRAMENTO, CA 95814-5512
www.energy.ca.gov

May 13, 2010

Ms. Marilyn Beardslee
Kern Council of Governments
1401 19th Street, Suite 300
Bakersfield, CA 93301

Dear Ms. Beardslee:

The California Energy Commission has received the Kern Council of Governments' Supplemental/Subsequent EIR titled 2011 Kern COG Regional Transportation Plan, SCH 2006111110 that was submitted on 4/30/2010 for comments due by 6/14/2010. After careful review, the Energy Commission has found the following:

We would like to assist in reducing the energy usage involved in your project. Please refer to the enclosed Appendix F of the California Environmental Quality Act for how to achieve energy conservation. 3

In addition, the Energy Commission's *Energy Aware Planning Guide* is also available as a tool to assist in your land use planning. For further information on how to utilize this guide, please visit www.energy.ca.gov/energy_aware_guide/index.html.

Thank you for providing us the opportunity to review/comment on your project. We hope that our comments will be helpful in your environmental review process.

If you have any further questions, please call Gigi Tien at (916) 651-0566.

Sincerely,

Bill Pfanner

BILL PFANNER
Supervisor, Local Energy & Land Use Assistance Unit
Special Projects Office
Fuels and Transportation Division
California Energy Commission
1516 Ninth Street, MS 23
Sacramento, CA 95814

Enclosure

Appendix F
ENERGY CONSERVATION

I. Introduction

The goal of conserving energy implies the wise and efficient use of energy. The means of achieving this goal include:

(1) decreasing overall per capita energy consumption,
(2) decreasing reliance on natural gas and oil, and
(3) increasing reliance on renewable energy sources.

In order to assure that energy implications are considered in project decisions, the California Environmental Quality Act 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.

Energy conservation implies that a project's cost effectiveness be reviewed not only in dollars, but also in terms of energy requirements. For many projects, lifetime costs may be determined more by energy efficiency than by initial dollar costs.

II. EIR Contents

Potentially significant energy implications of a project should be considered in an EIR. The following list of energy impact possibilities and potential conservation measures is designed to assist in the preparation of an EIR. In many instances, specific items may not apply or additional items may be needed.

A. Project Description may include the following items:
   1. Energy consuming equipment and processes which will be used during construction, operation, and/or removal of the project. If appropriate, this discussion should consider the energy intensiveness of materials and equipment required for the project.
   2. Total energy requirements of the project by fuel type and end use.
   3. Energy conservation equipment and design features.
   4. Initial and life-cycle energy costs or supplies.
   5. Total estimated daily trips to be generated by the project and the additional energy consumed per trip by mode.

B. Environmental Setting may include existing energy supplies and energy use patterns in the region and locality.

C. Environmental Impacts may include:
   1. The project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project's life cycle including construction, operation, maintenance and/or removal. If appropriate, the energy intensiveness of materials may be discussed.
   2. The effects of the project on local and regional energy supplies and on requirements for additional capacity.
   3. The effects of the project on peak and base period demands for electricity and other forms of energy.
   4. The degree to which the project complies with existing energy standards.
   5. The effects of the project on energy resources.
   6. The project's projected transportation energy use requirements and its overall use of efficient transportation alternatives.

D. Mitigation Measures may include:
   1. Potential measures to reduce wasteful, inefficient and unnecessary consumption of energy during construction, operation, maintenance and/or removal. The discussion should explain why certain measures were incorporated in the project and why other measures were dismissed.
   2. The potential of siting, orientation, and design to minimize energy consumption, including transportation energy.
   3. The potential for reducing peak energy demand.
   4. Alternate fuels (particularly renewable ones) or energy systems.
   5. Energy conservation which could result from recycling efforts.

E. Alternatives should be compared in terms of overall energy consumption and in terms of reducing wasteful, inefficient and unnecessary consumption of energy.

F. Unavoidable Adverse Effects may include wasteful, inefficient and unnecessary consumption of energy during the project construction, operation, maintenance and/or removal that cannot be feasibly mitigated.

G. Irreversible Commitment of Resources may include a discussion of how the project preempts future energy development or future energy conservation.

H. Short-Term Gains versus Long-Term Impacts can be compared by calculating the energy costs over the lifetime of the project.

I. Growth Inducing Effects may include the estimated energy consumption of growth induced by the project.

California Clean Energy Committee

June 10, 2010

Ms. Marilyn Beardslee, Project Administrator
Kern Council of Governments
1401 – 19th Street, Suite 300
Bakersfield, California 93301

Re: Comments on the Draft Environmental Impact Report
Kern COG 2011 Regional Transportation Plan

4 – Entire Letter

Dear Ms. Beardslee:

This letter will constitute comments by the California Clean Energy Committee regarding the Kern COG 2011 Regional Transportation Plan draft programmatic environmental impact report (EIR). P1

The Committee is a California non-profit corporation headquartered in Santa Barbara which seeks to promote energy conservation, greenhouse gas reduction, and the development of clean-energy resources in California. It actively supports the application of the California Environmental Quality Act (CEQA) to energy conservation and to related impacts. P2

Seventy-six percent of participants in the Kern COG Blueprint agreed or strongly agreed that alternative transportation should be expanded. Thirty-nine percent favored major policy changes to protect the environment and natural resources. P3

Over 40 individuals in Kern County have joined the California Clean Energy Committee's campaigns. Eighteen individuals have joined the campaign to request that the environmental impact report on the Kern COG regional transportation plan include increased energy conservation and sustainable transportation. P4

All notices regarding this project are requested to be sent to 1224 North Ontare Rd., Santa Barbara, California 93105-1940. Please feel free to contact the undersigned for additional information. P5

With respect to GHG impacts, the EIR should analyze the environmental loads emitted from the project life cycle. The life cycle includes manufacturing of construction materials, project construction, maintenance, and repair. Building a lane-mile of roadway can release as much as 2300 tons of CO2, and long-term maintenance and reconstruction activities can release as much as 5200 tons of CO2 per lane mile. In addition, mainten- P6

California Clean Energy Committee | 1224 North Ontare Road, Santa Barbara, CA 93105-1940
Voice: 805-683-4648 | Facsimile: 805-845-5426

ance and construction activities also create substantial congestion which can last for years resulting reduced fuel efficiency and increased emissions of CO2 and criteria pollutants.

The impacts of the project on air quality and GHG emissions should be compared to current emissions of CO2 and criteria pollutants including ROG, NOx, CO, PM2.5, and PM10. However, current emissions have not been quantified. The budget thresholds do not constitute the baseline. P7

Population should be factored out of GHG data by calculating per capita emissions. The comparison of two 2035 scenarios obscures the fact that increased per capita emissions are a significant impact. Per capita emissions should be disclosed in the document and quantified for each alternative. P8

The GHG analysis also should be a cumulative analysis including either a list of projects creating related impacts or a summary of impacts from an adopted planning document. P9

A significance threshold for GHG emissions should be adopted, and the threshold should be consistent with the Scoping Plan adopted by the California Air Resources Board (CARB). The CARB Scoping Plan calls for a 4% per year reduction in VMT per capita. P10

Impact 3.5.1 in the EIR concludes that the 2011 RTP may cause climate change due to its influence on where and how travel occurs. The impact of the RTP on where and how travel occurs should be quantified based on scientific evidence. The proposed mitigation of the impact should also be quantified. P11

Making additional road capacity available to commuters can result in the over-use of roadways and can diminish the use of more environmentally-sustainable modes such as transit, cycling, and walking. The negative impact on transit ridership of providing increased roadway capacity should be analyzed. P12

The existing greenhouse gas emissions of the regional system should be quantified using an appropriate model which should be evaluated and justified. Kern COG has experience for modeling sprawl impacts based on the Kern Blueprint process. There are a variety of projection tools available. INDEX is a current and endorsed GHG emissions modeling technology which allows for the computation of greenhouse gas emissions under a variety of transportation system designs and population scenarios and is able to quantify how proposed policies affect GHG emissions. INDEX allows for modeling of GHG mitigation. P13

The EIR should adopt feasible mitigation for the impact on climate change that is within its power to adopt or promote in the region. Mitigation can include the purchase of carbon credits, increased funding for transit service, congestion pricing, increased funding for Amtrak, biking and pedestrian infrastructure, subsidies for sustainable energy P14

California Clean Energy Committee | 1224 North Ontare Road, Santa Barbara, CA 93105-1940
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projects, employee transit incentives, parking pricing, cordon pricing, gas taxes, registration fees, public education, growth boundaries, transit-oriented development opportunities, incentives for local agencies, complete streets, lower transit fares, new transit service, car-sharing, SOV reduction programs, monthly transit passes, public support for electric vehicles, on-line ride matching, eco-driving training, freeway management, modal diversion, etc.

The EIR concludes that the RTP will have a cumulatively considerable impact on land use. The EIR should model the impact on sprawl and evaluate mitigation through mode shifts and similar smart growth tools. P15

The EIR should evaluate induced traffic. Roadway capacity expansion can impact individual decisions about when, where and how to travel. Increasing roadway capacity can reduce automobile travel times and thus enhance the attractiveness of highway use. Reducing travel times can lead individuals to travel to more remote destinations thus increasing VMT and related impacts. P16

Induced traffic does not include traffic increases that result from population increases or economic growth. However, reducing the cost of travel in terms of the time required can lead to an increase in the number of trips individuals take. Induced traffic connected with capacity expansion can be mitigated by using tolls or congestion pricing. These impacts should be evaluated and mitigated. P17

The RTP would also encourage driving by providing a subsidy to individuals who elect to travel by SOV since individuals pay only part of the cost of travel by SOV through user fees such as gas taxes, vehicle costs, private insurance, and registration fees. The impacts on the physical environment of subsidies for SOV travel could be mitigated by congestion pricing or by shifting funding to more sustainable modes such as transit, cycling, and walking. P18

Energy consumption and energy efficiency should be quantified and evaluated. The environmental setting should discuss the energy setting of the project including the uncertainties of crude oil supplies, price volatility, and the related impacts on transit ridership and on low income populations. Focusing public transportation funding on SOVs will not provide a cost-effective transportation mode for low income populations during periods of volatile oil prices. Overall use of energy and energy efficient alternatives should be evaluated scientifically. Direct and indirect project energy consumption should be considered. P19

The EIR should consider the increased emissions that result from high speed vehicle operation where traffic congestion is reduced. NOx emissions, VOC emissions, CO_2 emissions and energy consumption per vehicle mile increase considerably at speeds over P20

California Clean Energy Committee | 1224 North Ontare Road, Santa Barbara, CA 93105-1940
Voice: 805-683-4648 | Facsimile: 805-845-5426

45 mph. For example, the purpose of the now-repealed 55 mile-per-hour speed limit was energy conservation. Where freeway capacity is increased and congestion is reduced, vehicle speeds can rise considerably. At higher speeds fuel economy degrades rapidly. This is a potentially significant adverse impact that should be modeled as a part of the air quality, GHG and energy impact sections. Mitigation could include funding devoted to strict enforcement of speed limits, traffic calming measures, and programs to encourage local agencies to adopted lower speed limits.

Transportation decisions have considerable implications for public health including fatalities, injuries, and concentrated ground-level exhaust emissions particularly from diesel vehicles. Over 33,000 people died in traffic crashes in 2009 and many more suffered injury. Transportation planning decisions have an impact on physical inactivity and rising asthma and obesity rates in both adults and children. By focusing transportation funding on roadway capacity as opposed to sustainable transportation policies, the RTP would have an adverse impact on public health that should be evaluated in the EIR. Sustainable transportation alternatives such as walking, bicycling and transit use are convenient and cost-effective ways to introduce more physical activity into daily life. The EIR should quantify the project impacts on human health. P21

The EIR should consider the impacts of climate change on the transportation infrastructure in Kern County. P22

With respect to the agency's alternatives analysis, the VMT Reduction Alternative concludes that the alternative is not feasible because the diversion of the limited funds available to alternative transportation would lead to unacceptable delay, congestion and air quality impacts. There are cost-effective tools that both reduce congestion and provide personal mobility. The impacts of allowing an unlimited increase overall VMT are equally unacceptable for many reasons including the economic impacts on low income populations. The reduced VMT alternative should consider the policies discussed herein such as congestion pricing which can generate revenues for transportation services. P23

Respectfully submitted,

Eugene S. Wilson

California Clean Energy Committee | 1224 North Ontare Road, Santa Barbara, CA 93105-1940
Voice: 805-683-4648 | Facsimile: 805-845-5426

Ms. Marilyn Beardslee
June 11, 2010
Page 5

APPENDICES

Appendix 1: San Joaquin Valley Air Pollution Control District. Air Quality Guidelines for General Plans (June, 2005)

Appendix 2: San Joaquin Valley Air Pollution Control District. Final Staff Report: Addressing Greenhous Gas Emissions Impacts Under the California Environmental Quality Act (December, 2009).

Appendix 3: California Air Pollution Control Officers Association. CEQA and Climate Change (January 2008).

Appendix 4: City of Redwood City, New General Plan Draft Environmental Impact Report (May, 2010).

Appendix 5: Caltrans. Energy and Transportation Systems (July, 1983).

Appendix 6: Kwngho Park et al. Quantitative Assessment of Environmental Impacts on Life Cycle of Highways, Journal of Construction Engineering and Management (January, 2003).

Appendix 7: Williams-Derry, Clark. Increases in Greenhouse-Gas Emissions from Highway Widening Projects. (October, 2007).

Appendix 8: Litman, R. Generated Traffic and Induced Travel: Implications for Transport Planning (March, 2010).

Appendix 9: U.S. EPA. URBAN Sprawl Modeling, Air Quality Monitoring and Risk Communication; the Northeast Ohio Project (November, 2002).

Appendix 10: Parsons Brinckerhoff Quade & Douglas. Land Use Impacts of Transportation: A Guidebook (October 1998).

Appendix 11: R. Ewing, R. Pendall, D. Chen, Measuring Sprawl and Its Impact.

Appendix 12: Centers for Disease Control and Prevention. CDC Recommendations for Improving Health through Transportation Policy

Appendix 13: American Public Health Association, The Hidden Health Cost of Transportation (May, 2010).

California Clean Energy Committee | 1224 North Ontare Road, Santa Barbara, CA 93105-1940
Voice: 805-683-4648 | Facsimile: 805-845-5426

Appendix 14: U.S. Congress, Office of Technology Assessment, Saving Energy in U.S. Transportation, (Washington, DC: U.S. Government Printing Office, July 1994).

Appendix 15: California Air Resources Board, Climate Change Scoping Plan (December 2008).

Appendix 16: California Natural Resources Agency, 2009 California Climate Adaptation Strategy (December 2009).

Appendix 17: Kern Council of Governments, Kern Regional Blueprint Program; Final Report (December 2008).

Appendix 18: Urban Land Institute, Moving Cooler (July 2009).

Appendix 19: National Research Council, Transportation Research Board, Expanding Metropolitan Highways: Implications for Air Quality and Energy Use (1995).

Appendix 20: TRB, Potential Impacts of Climate change on U.S. Transportation

Appendix 21: Subsidyscope, Analysis Finds Shifting Trends in Highway Funding: User Fees Make Up Decrease Share

California Clean Energy Committee | 1224 North Ontare Road, Santa Barbara, CA 93105-1940
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City of Wasco

Bob Wren, Deputy Director of Public Works – email dated 6/2/10

Item 3. 2011 RTP SEIR – Page 2-8 – Question – This page includes the Shafter/Wasco High Speed Rail Heavy Maintenance Facility for $450,000,000. Has a determination been made on the site location and if not do you know when a decision might be made? 5

8.0 CHANGES, ADDITIONS AND CORRECTIONS TO THE DRAFT SEIR

The following changes, additions and corrections to the Draft Subsequent Environmental Impact Report (Draft SEIR) are recommended. Such changes, additions and corrections have been identified to address written comments received on the Draft SEIR.

- Chapter 2, Page 2-2, Section 2.3, Paragraph 1, 5th Sentence; replace the date "September 20, 2007" with "April 2010".

- Chapter 2, Page 2-7, Table 2-2; remove the words "four lanes" at the end of the project description for the Route 119 project between Cherry Avenue and Elk Hills Road.

- Chapter 2, Page 2-19, under the section titled "Limited Transit Dollars"; replace the existing paragraphs with the following:

  Financial resources for public transportation are limited while demand for those resources continues to increase. Traditional public transportation revenue sources do not support the increasing need for public mass transportation to help mitigate population increases, clean air mandates, and trip reduction programs. The expansion of public transportation services in Kern County is predicated on an aggressive financial plan. The Golden Empire Transit District's (GET) budgets have increased annually as the system responds to increasing consumer demand for transit, in part caused by recessive economic times and shrinking disposable dollars. The financial core to subsidize public transit service is the Transportation Development Act (TDA) Local Transportation Fund (LTF). Funds for the LTF are derived from that portion of the local sales and use tax attributed to the County, or one quarter of 1% of the 8.25% sales and use tax rate. Kern Council of Governments (Kern COG) apportions these taxes to public transit throughout Kern County. In addition, the TDA authorized the State legislature to budget for State Transit Assistance (STA) funding, by means of allocating a portion of the sales and use tax on gasoline.

  However, in an attempt to balance the State's financial problems, the Governor suspended the State Transit Improvement Fund for five years. This action began in 2008-09 and will continue, unless alternate financial means become available. Lost funding reduces the opportunity to increase transit service or to acquire more buses. The action clearly demonstrates transit's role in relation to all state-funded activities.

  Currently, no local dedicated funding source is available for public transit. A one-half cent countywide sales tax ballot issue for highway as well as transit improvements failed in November 2006. Given the desire on the part of many policy makers and residents for public transit to play a meaningful role in improving air quality, promoting mobility among transit dependant populations, and supporting economic development in the community, the need to secure a dedicated and increasing source of funding becomes imperative.

- Chapter 2, Page 2-20, under the section titled "Population Residing More Than ¼ Mile From Transit Route"; replace the paragraph with the following:

  GET District policy is for 90 percent of residents within metropolitan Bakersfield to be within one-quarter mile of an existing route; however, within the District, several populated areas are more than one-quarter mile from a transit route. Currently, GET serves about 75 percent, or 15 percent less than the District goal. Most of this population is on the periphery of metropolitan Bakersfield, with some areas that form "holes" in the one-quarter mile buffer around the routes. While some of the unserved areas may not have high transit potential, portions of the southwest do have high transit potential, but are currently under-served.

Continued development around the urban fringe presents many difficulties in meeting route coverage standards. Much of the new development is low density; middle and upper income housing that tends to generate little transit ridership. Furthermore, new development is not always contiguous to existing development causing transit services to cover unproductive miles in outlying areas that generate low ridership. However, urban fringe development may generate levels of transit ridership to justify express bus service, such as is offered by GET between Bakersfield College and California State University Bakersfield.

- Chapter 2, Page 2-20, under the section titled "Recent Transit Planning Activities"; add the following paragraphs before the Section titled "Eastern Sierra Public Transportation Study":

  New Public Transportation Services Plan: In 2005 GET submitted a joint application with Odyssey, a statewide transportation nonprofit organization, for a Caltrans Community-Based Transportation Planning grant to help plan improvements to transit service in Bakersfield. The purpose of this grant was to develop a service plan to provide more innovative and effective public transportation options for serving under-served and hard-to-serve neighborhoods and major destinations within Bakersfield. The primary goal of the project was to engage GET's stakeholders in the planning process and develop plans that improve mobility and increase transportation choices and transit usage given available resources. The study was completed in 2008 and several service improvements recommended in this study have been implemented, including headway improvements and service extensions.

  Long Range Plan: The Golden Empire Transit District in partnership with the Kern Council of Governments is initiating a metropolitan Bakersfield Transit System Long Range Plan. The Plan is expected to be completed in 2011. The Plan will provide public agency staff and elected officials with information documenting the relationship between population growth in metropolitan Bakersfield, transit ridership demand, funding, and the evaluation of current operations and efficiencies. The purpose of the Plan is to address emerging intra-city transit system needs. It will also address connectivity between rural areas and major regional transportation facilities such as the Amtrak train station and Bakersfield's airports. The Plan includes public outreach to solicit public input on transit needs.

- Chapter 3, Page 3-73, Section 3.4.2, under the subsection titled "Mitigation Measures"; add the following to the end of the list of measures:

  - Use resource data to inform transportation decision-making.
  - Use watershed, conservation, and recovery plans to identify important environmental considerations for the Kern COG region, such as critical wildlife corridors, the most important areas to protect for sensitive species, and areas with a high concentration of resources.
  - Give conservation plans as much weight as General Plans when planning transportation investments.
  - Incorporate concepts such as 100 to 200 foot buffers for stream corridors, and identification and improvement of priority culverts that currently restrict wildlife corridors and natural processes of stream and river systems.
  - Use parcel maps to identify larger, undivided parcels for ease of acquisition and preservation, and designate areas as potential future mitigation sites.
  - Consider the resource, "Eco-logical: An Ecosystem Approach to Developing Infrastructure Projects" (2006) which encourages Federal, State, Tribal and Local partners involved in the infrastructure planning, design, review, and construction to use flexibility in regulatory processes.
  - Identify financial mechanisms to fund mitigation, such as development fees, sales tax, or the use of funds from alternative methods to identify and protect critical resource areas.
  - Establish conservation easements that connect to and expand existing conservation areas.

- Describe locally-developed measures such as designated open space, measures requiring development set-backs near streams, etc.
- The following list of data resources should be referenced during development of biotic plans and studies for transportation improvement projects:
  - U.S. Fish & Wildlife Service species recovery plans;
  - USDA Natural Resources Conservation Service wetland data;
  - Nature Conservancy data and regional planning documents;
  - California Department of Fish and Game Natural Diversity Database; and
  - Local non-profit and land trust group information.

- Chapter 3, Page 3-96, Section 3.5.2; add the following mitigation measure to the list of mitigation measures:

  Project level environmental documents shall analyze construction and maintenance Greenhouse Gas (GHG) emissions.

- Chapter 3, Page 3-200, Section 3.14; replace the 3rd sentence in the 2nd paragraph with the following sentence:

  Current GET annual ridership (under Bus System Improvements) is approximately 7.3 million.

- Chapter 3, Page 3-200, Section 3.12; replace the 4th paragraph with the following:

  Golden Empire Transit (GET) has provided public transit service for the metropolitan Bakersfield area since 1973. Today, GET operates 20 routes with a maximum of 70 buses in service. GET's service area covers 160 square miles and serves approximately 459,000 residents. GET-A-Lift provides complementary paratransit service within metropolitan Bakersfield for those who are physically unable to use the fixed route service. Elderly and disabled services are also provided by the Consolidated Transportation Service Agency (CTSA).

  GET has determined that within metropolitan Bakersfield, the east and southeast areas exhibit the highest service potential. This analysis is based on population density, income, auto ownership, and age. Other areas with high transit potential are portions of Oildale and central Bakersfield. The lowest potential rider areas include portions of the southwest and northwest.

  Total transit ridership across Kern County showed a slight decline over the years FY2004-2007 as shown in Table 4-4 in the RTP. Ridership for GET and Kern Regional Transit (KRT), however, has increased in more recent years as a result of service expansion and rising gasoline prices. Ridership reflected in Table 4-4 for GET and GET-A-Lift for 2007-08 was 7,029,420 and for 2008-09 was 7,578,323. An all-time record for ridership was achieved in 2008-09.

  For GET, the regular fare is $1.00. For seniors & the disabled, the fare is $.50. The fare for GET-A-Lift is $2.00.

  In 2008-09, GET's fixed route operation achieved its highest ridership level ever with 7,514,503 riders. Over the last several years, GET-A-Lift's ridership has increased almost every year. Changes since 2000 include: Sunday and evening service was initiated, Day Passes replaced transfers, headways were improved on several routes, and the first 40 ft.-length buses were placed into service. GET has made a commitment to improving Kern County's air quality by purchasing compressed natural gas (CNG) buses. By early 2006, GET's entire fleet, including those assigned to staff, was CNG-fueled. GET has installed bike racks on all of its buses to facilitate intermodal trips, which provides an ancillary improvement to air quality. In partnership with IKEA and Tejon Ranch, GET initiated a new express route between Downtown Bakersfield, Bakersfield Auto Mall, and

Tejon Industrial Complex in October 2008. A permanent park and ride lot for this service will be established in the Greenfield area.

- Include the following section on Energy and Energy Conservation in Chapter 3 of the Draft SEIR as Section 3.15:

3.15 ENERGY AND ENERGY CONSERVATION

This section describes the existing energy resources, and analyzes the effects on energy consumption and conservation that would result from implementing the proposed 2035 projects.

Regulatory

Federal

- Energy Policy and Conservation Act

  The Energy Policy and Conservation Act of 1975 sought to ensure that all vehicles sold in the U.S. would meet certain fuel economy goals. Through this Act, Congress established the first fuel economy standards for on-road motor vehicles in the U.S. Pursuant to the Act, the National Highway Traffic and Safety Administration, which is part of the USDOT, is responsible for establishing additional vehicle standards and for revising existing standards. Since 1990, the fuel economy standard for new passenger cars has been 27.5 mpg. Since 1996, the fuel economy standard for new light trucks (gross vehicle weight of 8,500 pounds or less) has been 20.7 mpg. Heavy-duty vehicles (i.e., vehicles and trucks over 8,500 pounds gross vehicle weight) are not currently subject to fuel economy standards. Compliance with federal fuel economy standards is determined on the basis of each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the U.S. The Corporate Average Fuel Economy (CAFE) program, which is administered by the EPA, was created to determine vehicle manufacturers' compliance with the fuel economy standards. The EPA calculates a CAFE value for each manufacturer based on city and highway fuel economy test results and vehicle sales. Based on the information generated under the CAFE program, the USDOT is authorized to assess penalties for noncompliance.

- Energy Policy Act of 1992 (EPAct)

  The Energy Policy Act of 1992 (EPAct) was passed to reduce the country's dependence on foreign petroleum and improve air quality. EPAct includes several parts intended to build an inventory of alternative fuel vehicles (AFVs) in large, centrally fueled fleets in metropolitan areas. EPAct requires certain federal, state, and local government and private fleets to purchase a percentage of light-duty AFVs capable of running on alternative fuels each year. In addition, financial incentives are also included in EPAct. Federal tax deductions will be allowed for businesses and individuals to cover the incremental cost of AFVs. States are also required by the act to consider a variety of incentive programs to help promote AFVs.

- Energy Policy Act of 2005

  The Energy Policy Act of 2005 was signed into law by President Bush on August 8, 2005. Generally, the act includes provisions for renewed and expanded tax credits for electricity generated by qualified energy sources, such as landfill gas; provides bond financing, tax incentives, grants, and loan guarantees for clean

renewable energy and rural community electrification; and establishes a federal purchase requirement for renewable energy.

- The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users

  SAFETEA-LU, enacted August 10, 2005, authorizes the federal surface transportation programs for highways, highway safety, and transit. SAFETEA-LU addresses the many challenges facing our transportation system today—challenges such as improving safety, reducing traffic congestion, improving efficiency in freight movement, increasing intermodal connectivity, and protecting the environment—as well as laying the groundwork for addressing future challenges. SAFETEA-LU promotes more efficient and effective federal surface transportation programs by focusing on transportation issues of national significance, while giving state and local transportation decision makers more flexibility for solving transportation problems in their communities.

State of California

- Senate Bill 1078

  SB 1078 establishes a renewable portfolio standard (RPS) for electricity supply. The RPS requires that retail sellers of electricity, including investor-owned utilities and community choice aggregators, provide 20 percent of their supply from renewable sources by 2017. This target date was moved forward by SB 1078 to require compliance by 2010. In addition, electricity providers subject to the RPS must increase their renewable share by at least 1 percent each year. The outcomes of this legislation will impact regional transportation powered by electricity.

- State of California Integrated Energy Policy Report

  In 2002, the Legislature reconstituted the State's responsibility to develop an integrated energy plan for electricity, natural gas, and transportation fuels. The California Energy Commission (CEC) adopts and transmits to the Governor and Legislature a report of findings every 2 years. At a Special Business Meeting on November 12, 2003, the CEC adopted the 2003 Integrated Energy Policy Report. The 2004 Update to the Integrated Energy Policy Report was adopted by the CEC on November 3, 2004. The 2005 Integrated Energy Policy Report was adopted by the CEC on November 21, 2005. These reports make recommendations to increase California's energy supplies, reduce energy demand, broaden the range of alternatives to conventional energy sources, and improve the State's energy delivery infrastructure.

- California Strategy to Reduce Petroleum Dependence (AB 2076)

  AB 2076 (Chapter 936, Statutes of 2000) requires the CEC and the Air Resources Board (ARB) to develop and submit to the Legislature a strategy to reduce petroleum dependence in California. The statute requires the strategy to include goals for reducing the rate of growth in the demand for petroleum fuels. In addition, the strategy is required to include recommendations to increase transportation energy efficiency as well as the use of nonpetroleum fuels and advanced transportation technologies including alternative fuel vehicles, hybrid vehicles, and high-fuel efficiency vehicles.

  The strategy, Reducing California's Petroleum Dependence, was adopted by the CEC and ARB in 2003. The strategy recommends that California reduce on-road gasoline and diesel fuel demand to 15 percent below 2003 demand levels by 2020 and maintain that level for the foreseeable future; the Governor and Legislature work to establish national fuel economy standards that double the fuel efficiency of new cars,

light trucks, and SUVs; and increase the use of nonpetroleum fuels to 20 percent of on-road fuel consumption by 2020 and 30 percent by 2030.

- Alternative Fuels Plan Assembly Bill 1007

  AB 1007 requires the CEC to prepare a state plan to increase the use of alternative fuels in California. The plan shall include an evaluation of alternative fuels for emissions or criteria air pollutants, air toxics, GHGs, water pollutants, and other harmful substances, and their impacts on petroleum consumption. The plan shall set goals for increased alternative fuel use in the state for the years 2012, 2017, and 2022 and recommend policies to ensure the alternative fuel goals are attained, including standards on transportation fuels and vehicle and policy mechanisms to ensure vehicles operating on alternative fuels use those fuels to the maximum extent feasible. The plan was adopted in December 2007.

- Bio-energy Action Plan – Executive Order #S-06-06

  Executive Order #S-06-06 establishes targets for the use and production of bio-fuels and bio-power and directs state agencies to work together to advance biomass programs in California while providing environmental protection and mitigation. The executive order establishes the following target to increase the production and use of bio-energy, including ethanol and biodiesel fuels made from renewable resources: produce a minimum of 20 percent of its bio-fuels within California by 2010, 40 percent by 2020, and 75 percent by 2050. The executive order also calls for the state to meet a target for use of biomass electricity.

- Governor's Low Carbon Fuel Standard (Executive Order #S-01-07)

  Executive Order #S-01-07 establishes a statewide goal to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020 through establishment of a Low Carbon Fuel Standard. The Low Carbon Fuel Standard shall be incorporated into the State Alternative Fuels Plan required by AB 1007 and is one of the proposed discrete early action GHG reduction measures identified by ARB pursuant to AB 32.

Local

Kern Energy Watch Program

Kern COG has developed the Kern Energy Watch Program to design and operate a local government partnership program for the purpose of increasing energy conservation and efficiency within the county, cities, special districts and other units of local government in the Kern region. Public utility partners include Pacific Gas & Electric, Southern California Edison and Southern California Gas (Sempra Energy).

The program is intended to:

- Organize and coordinate the activities of the Kern Energy Advisory Committee (KEAC), including preparation of meeting agendas, item supporting documentation and minutes;
- Compose and circulate a Request for Proposals for professional services in designing an comprehensive and integrated Kern Regional Energy Plan;
- Conduct an inventory and needs assessment of local resource, information and training activities of agencies in the Kern region;
- Design and implement a marketing program to provide program information to units of local government;

- Meet with each unit of local government and secure a formal commitment to join the Kern Energy Watch Program;
- Coordinate the conduct of energy assessments and audits;
- Conduct or coordinate the conduct of energy efficiency workshops & seminars; and
- Coordinate the provision of technical support and services for energy efficient retrofit Projects.

Kern Regional Energy Plan

Kern COG will embark on the development of this plan during FY 2010-11. Kern COG will develop and coordinate the implementation of the Kern Regional Energy Plan as part of its Kern Energy Watch Program. The effort will also involve integrating transportation and energy planning efforts in the Kern region.

Environmental Setting

Energy Consumption and Conservation

The study area is comprised of highways, railways, bicycle trails, state routes, roads, and Caltrans rights-of-way. This analysis assumes that automobiles, trucks, transit buses, and other forms of transportation would continue to operate within the Kern region and use a variety of energy forms, including gasoline, compressed natural gas, diesel, and electricity. This section considers the supply and demand for both electricity and fossil fuels.

Energy is fundamental to the economy and the quality of life of the Kern County region. The primary energy source for the U.S. is petroleum (also referred to as "oil"), which is refined to produce fuels like gasoline, diesel, and jet fuel. Oil is a finite, nonrenewable energy source. World consumption of petroleum products has grown steadily since 1983; as of 2005, world consumption of oil had reached 84 million barrels per day (GAO 2007). The world supply of oil is anticipated to peak (i.e., reach the point of maximum production) sometime between now and 2040, before beginning a terminal decline that will put a significant strain on the economy if not anticipated and mitigated. However, the timing of the peak depends on multiple, uncertain factors that will affect how quickly remaining oil is consumed, such as the amount of oil that still remains in the ground; how much of the amount in the ground can be extracted and produced based on technological, economic, and environmental feasibility; and future demand for oil.

The U.S., with approximately 5 percent of the world's population, accounts for just fewer than 25 percent of world oil consumption, roughly 21 million barrels per day (EIA 2007). U.S. oil production peaked around 1970 and has been declining ever since; it was about five million barrels per day in 2005. As a result, the U.S. imported about 76 percent of its oil in 2005. The U.S. transportation sector is heavily dependent on oil and represents about 69 percent of U.S. petroleum consumption. Within the transportation sector, light vehicles (i.e., cars, light trucks [two-axle, four-tire trucks], and motorcycles) represent about 60 percent of the petroleum-based energy consumption.

California's transportation sector is equally dependent upon oil, with petroleum-based fuels currently providing nearly all (96 percent) of California's transportation energy needs (State of California 2007). Furthermore, transportation-related activities represent almost half (48 percent) of California's petroleum-based fuel consumption. According to a 2005 California Energy Commission (CEC) report, California's demand for transportation fuels has increased 53 percent in the last 20 years, and in the next 20 years gasoline and diesel demand will increase another 36 percent (CEC 2005). California refineries increasingly rely on imported petroleum products to meet this demand. In 2003 the CEC and ARB adopted a two-part strategy to reduce the state's petroleum demand: promoting improved vehicle efficiency and increasing the use of alternative fuels. In 2005, alternative fuels represented 6 percent of the state's transportation energy needs. In 2006, CEC and ARB

set a goal that 20 percent of all transportation energy in 2020 comes from alternative fuels. State plans, programs, and regulations to implement this strategy are further discussed in the Regulatory Setting section below.

Similar to California and the U.S. as a whole, the Kern region relies primarily on oil to meet its transportation needs. Motor vehicles are the largest consumer of fuels in the region's transportation sector. After gasoline, diesel fuel is the most utilized transportation energy source. The primary consumers of diesel fuel in the transportation sector are heavy-duty trucks, with medium-duty trucks, buses, light-duty passenger cars, and railway locomotives accounting for remaining diesel fuel consumption.

Alternative fuels are defined as fuels not derived from petroleum, such as natural gas, ethanol, and electricity. However, like petroleum, alternative fuels like natural gas and ethanol (which is primarily composed of diesel fuel) are also nonrenewable, finite resources. Electricity is also considered nonrenewable when generated from natural gas or coal, but considered renewable when generated from sources like solar, hydroelectric, or wind energy. Most alternative fuel facilities in the region supply compressed natural gas (CNG) or electricity. The region's limited alternative fuel infrastructure severely constrains the use of alternative fuel passenger vehicles.

Although average fuel efficiency for autos and trucks has experienced some improvements during the last quarter-century, fuel consumption associated with the large increase in VMT has exceeded the fuel consumption reductions achieved by improved efficiency, and the total amount of annual fuel consumption has continued to increase. The equipment and vehicles involved in the construction of transportation infrastructure (i.e., roadway and highway improvements; rail lines; etc.) also consume energy. Currently, construction equipment and vehicles are generally dependent on petroleum-based fuels.

Energy Conservation and Global Climate Change

The consumption of nonrenewable energy (primarily gasoline and diesel fuel) associated with construction activities and the operation of passenger, public transit, and commercial vehicles results in GHG emissions that cause global climate change (also referred to herein as "climate change" and "global warming"). In addition, alternative fuels like natural gas (including CNG and liquid natural gas [LNG]), ethanol, and electricity (unless derived from solar, wind, nuclear, or another energy source that does not produce carbon emissions) also result in GHG emissions and contribute to global climate change. An overview of climate change, the anticipated impacts of climate change to California, and the climate change impacts of the proposed 2011 RTP are provided in Chapter 3, Section 3.5 of the Draft SEIR. Impacts and mitigation measures associated with climate change also relate to the conservation of energy resources.

Environmental Impacts, Mitigation Measures, and Significance After Mitigation

Criteria for Significance

The following significance criteria were used to determine the level of significance of impacts on energy resources and energy conservation resulting from the proposed Project. Significance criteria were developed based on Appendix F of the State CEQA Guidelines and on professional judgment. In general, an individual improvement project contained within the RTP would result in a significant energy impact if it:

- Results in an increase in total consumption of nonrenewable energy or reduces the ability of the region to conserve energy resources.

Impact Analysis

The proposed 2011 RTP plans improvements to the region's transportation network through the year 2035. Since the transportation sector accounts for a large portion of the energy consumed in the Kern region, implementation of transportation network improvements would affect the region's energy consumption through 2035. In addition, construction of these improvements would result in increased energy consumption due to the operation of construction equipment and vehicles during construction activities. Multiple factors beyond the control of Kern COG and outside the scope of the proposed 2011 RTP may influence future transportation-related energy consumption patterns under the proposed 2011 RTP. These factors include but are not limited to state and federal regulatory actions; local land use decisions; technological improvements; regional economic conditions; the fuel-efficiency and fuel-source of private automobiles; the price of oil, gasoline, diesel, electricity, and other fuels; the source of region's electric power (i.e., proportion of renewable and nonrenewable sources); the amount of oil imported by the U.S. and others.

Although energy consumption would increase under the proposed 2011 RTP, the transportation improvements are designed to the improve energy efficiency of the regional transportation system by increasing use of more fuel-efficient public transit, carpools, and vanpools, and improving circulation system levels of service. See the Climate Change discussion in Section 3.5 of the Draft SEIR for a detailed discussion of RTP actions that promote GHG emissions reductions, energy conservation, energy efficiency and reduced fuel consumption. Examples of transportation improvements included in the proposed 2011 RTP that would improve energy efficiency include proposed transit improvements that would encourage optimized use of public transportation, and enhanced transit programs with new routes that would operate at higher speeds. Public transportation provides a more energy-efficient mode of travel than single-passenger vehicles, thereby reducing the region's transportation energy consumption. Any reductions in traffic congestion realized through implementation of enhanced transit operations would also allow for more energy-efficient vehicular travel.

The proposed 2011 RTP would also involve highway and arterial widenings, and new freeway interchanges. This in turn would decrease travel time and congestion and consequently decrease fuel consumption from individual vehicles. Despite these energy efficient improvements, total and per capita energy consumption associated with the transportation system is still anticipated to increase in 2035 under the proposed 2011 RTP.

The 2011 RTP encourages the transport of goods by rail to reduce congestion on the freeway system. Hauling goods by rail has a positive energy impact. The Federal Railroad Administration estimates that intermodal rail is 1.4 to 3.4 times more fuel efficient than trucks. This indicates reduced energy efficiency of goods movement in the region and increased nonrenewable energy consumption.

The construction of transportation infrastructure identified in the proposed 2011 RTP would involve the use of construction equipment and vehicles, which are generally dependent upon nonrenewable petroleum-based fuels, on a large scale. However, it is not feasible to estimate energy consumption associated with future construction of the projects in the proposed 2011 RTP at this program level of analysis. Nevertheless, the large scale of construction activities that would be required to implement the proposed 2011 RTP would result in an additional amount of additional energy consumption associated with the proposed 2011 RTP.

Lastly, the implementation of new transit stations and centers, transit priority measures, freeway and arterial widenings, and other improvements would include street and station lighting, parking structure lighting, traffic signals, electronic signage, and other ancillary components associated with the types of transportation improvements included in the proposed 2011 RTP. The energy consumption associated with these features would also increase under the proposed 2011 RTP.

Impact 3.15.1 - Energy Consumption & Conservation Impacts

Construction of the transportation improvements programmed in the proposed 2011 RTP would increase energy consumption due to the operation of construction equipment and vehicles. Given the number of large-scale improvements programmed into the proposed 2011 RTP, the increase in energy consumption associated with construction activities would be substantial. Although construction equipment and vehicles would be operated in accordance with all applicable rules and regulations, the substantial increase in energy consumption associated with the construction equipment and vehicles primarily powered by nonrenewable fuels under the proposed 2011 RTP is considered a significant impact.

Operation of the transportation improvements identified in the proposed 2011 RTP would increase the total and per capita amount of gasoline and diesel fuel consumption associated with the regional transportation network. Since gasoline and diesel are nonrenewable, petroleum-based fuels, the increase in gasoline and diesel consumption under the proposed 2011 RTP is considered a significant impact.

In addition to increased energy consumption directly associated with transportation activities, energy consumption would also increase as a result of new lighting including, but not limited to, lighting for streets stops or stations, transit station parking structures, and rail tunnels; traffic signals; electronic signage; and other ancillary electric, natural gas, or other energy-consuming components of transportation improvements that would be implemented under the proposed 2011 RTP. Increased energy consumption levels associated with these ancillary project features are considered a significant impact.

The proposed 2011 RTP includes goals and policies supporting smart growth through financial incentives, housing and mixed-use projects at existing and planned transit stations, support for local efforts to develop pedestrian master plans, and other activities that tend to reduce GHG emissions. However, since Kern COG has no direct authority over land use planning and other local decisions, the extent to which the goals and policies supporting smart growth would be implemented by local jurisdictions is unknown.

Since the 2011 RTP (2035 Planned scenario) would decrease highway congestion and enhance alternative modes relative to the No Project (2007 RTP) and No Build alternatives (2035 growth versus existing and programmed projects), it would result in potentially beneficial effects on the consumption and conservation of energy resources.

Mitigation Measures

The following mitigation measures shall be implemented by project implementation agencies to reduce the significant energy impacts of the proposed 2011 RTP. In addition, climate change mitigation measures referenced in Chapter 3, Section 3.5 will also contribute to the mitigation of energy consumption and energy conservation impacts.

- Project implementation agencies shall review energy impacts as part of any CEQA-required project-level environmental analysis and specify appropriate mitigation measures for any identified energy impacts.

- During the design and approval of transportation improvements implemented under the proposed 2011 RTP, the following energy efficiency measures shall be incorporated when applicable:

  - The design or purchase of any lighting fixtures including but not limited to lighting at transit stations, arterials or freeways, and parking structures/lots shall achieve energy reductions beyond an estimated baseline energy use for such lighting.

- LED technology shall be used for all new or replaced traffic lights, rail signals, and other features compatible with LED technology.

- Local agencies should consider various best practices and technological improvements that can reduce the consumption of fossil fuels such as:

  - Expanding light-duty vehicle retirement programs
  - Increasing commercial vehicle fleet modernization
  - Implementing driver training modules on fuel consumption
  - Replacing gasoline powered mowers with electric mowers
  - Reducing idling from construction equipment
  - Incentivizing alternative fuel vehicles and equipment
  - Developing infrastructure for alternative fueled vehicles
  - Implementing truck idling rules, devices, and truck-stop electrification
  - Requiring electric truck refrigerator units
  - Reducing locomotives fuel use
  - Modernizing older off-road engines and equipment
  - Encouraging freight mode shift
  - Limit use and develop fleet rules for construction equipment
  - Requiring zero-emission forklifts

- Local agencies should include energy analyses in environmental documentation and general plans with the goal of conserving energy through the wise and efficient use of energy. For any identified energy impacts, appropriate mitigation measures should be developed and monitored. Kern COG recommends the use of Appendix F, Energy Conservation, of the *CEQA Guidelines.*

- Local agencies should streamline permitting and provide public information to facilitate accelerated construction of solar and wind power.

- Local agencies should adopt a "Green Building Program" to promote green building standards. Green buildings can reduce local environmental impacts, regional air pollutant emissions and global greenhouse gas emissions. Green building standards involve everything from energy efficiency, usage of renewable resources and reduced waste generation and water usage. For example, water-related energy use consumes 19 percent of the state's electricity. The residential sector accounts for 48 percent of both the electricity and natural gas consumption associated with urban water use. While interest in green buildings has been growing for some time, cost has been a main consideration as it may cost more up front to provide energy-efficient building components and systems. Initial costs can be a hurdle even when the installed systems will save money over the life of the building. Energy efficiency measures can reduce initial costs, for example, by reducing the need for over-sized air conditioners to keep buildings comfortable. Undertaking a more comprehensive design approach to building sustainability can also save initial costs through reuse of building materials and other means.

  A comprehensive study of the value of green building savings is the 2003 report to California's Sustainable Building Task Force. In the words of the report: "While the environmental and human health benefits of green building have been widely recognized, this comprehensive report confirms that minimal increases in upfront costs of about 2% to support green design would, on average, result in life cycle savings of 20% of total construction costs -- more than ten times the initial investment. For example, an initial upfront investment of up to $100,000 to incorporate green building features into a $5 million project would result in a savings of $1 million in today's dollars over the life of the building."

- Local governments should alter zoning to improve jobs/housing balance, create communities where people live closer to work, and bike, walk, and take transit as a substitute for personal auto travel. Creating walkable, transit oriented nodes would generally reduce energy use and greenhouse gas emissions. Residential energy use (electricity and natural gas) accounts for 14 percent of California's greenhouse gas emissions. It is estimated that households in transit-oriented developments drive 45 percent less than residents in auto-dependent neighborhoods. In addition, mixed land uses (i.e., residential developments near work places, restaurants, and shopping centers) with access to public transportation have been shown to save consumers up to 512 gallons of gasoline per year. Furthermore, studies have shown that the type of housing (such as multi-family) and the size of a house have strong relationships to residential energy use. Residents of single-family detached housing consume over 20 percent more primary energy than those of multifamily housing and 9 percent more than those of single-family attached housing.

- Kern COG shall work with its member agencies to increase the number of AFVs (i.e., vehicles not powered strictly by gasoline or diesel fuel) both in municipally owned vehicles, as well as those owned by franchisees of these cities, such as trash haulers, green waste haulers, street sweepers, and curbside recyclable haulers.

- Bid solicitations for construction of projects proposed in the 2011 RTP and subsequent RTP updates shall preference the use of alternative formulations of cement and asphalt with reduced GHG emissions to the extent that such cement and asphalt formulations are available at a reasonable cost in the marketplace. Solicitations shall also preference the recycling of construction waste and debris if market conditions permit.

- Kern COG shall continue to develop, in coordination with the California Air Resources Board, a data and information collection and analysis system that provides an understanding of the energy demand and greenhouse gas emissions in the Kern region.

- All mitigation measures listed in Chapter 3, Section 3.5.1, are incorporated by reference and shall be implemented by implementing agencies to address energy conservation impacts.

Significance After Mitigation

Implementation and monitoring of the above mitigation measures will provide the framework and direction for subsequent individual improvement project-specific mitigation designed to avoid or reduce the identified significant Project impacts to a less than significant level.

- Chapter 4, Page 4-5, under the section titled "Transportation/Circulation", Paragraph 1; add the following sentence to the end of the paragraph: Kern COG and Fresno COG both have the ability to conduct a mode split analysis.

- Chapter 4, Page 4-5, under the section titled "Transportation/Circulation", Paragraph 2, 2nd Sentence; replace the sentence with the following: Kern COG has completed the illustration, which can be found on Page 4-82 of the RTP.

APPENDIX A – NOTICE OF PREPARATION

Notice of Preparation

To: Interested Parties

From: Kern Council of Governments
1401 19th St., Suite 300
Bakersfield, CA 93301

Subject: Notice of Preparation – Subsequent Environmental Impact Report (SEIR) for the 2011 Regional Transportation Plan

Kern Council of Governments (Kern COG) will be the Lead Agency and will prepare a Subsequent Environmental Impact Report (SEIR) for the project defined below. Kern COG is requesting input regarding the scope and content of the environmental information that is germane to your agency's statutory responsibilities in connection with the proposed project.

The project description, locale and probable environmental issues to be addressed in the SEIR are reflected on the following pages.

Your response is requested at the earliest possible date, but not later than 30 days after receipt of this notice. Please send your response to Ron Brummett at the address shown above. We will need the name of a contact person at your agency.

Project Title: Environmental Impact Report for the 2011 Regional Transportation Plan

Location: Kern County, California

Description: The 2011 Regional Transportation Plan examines a full range of transportation issues, opportunities and needs facing Kern County. It also provides goals, objectives, and policies to guide the identification and implementation of future transportation improvements for all modes, including: public transit; highways, streets and roads; bikeways and pedestrian; passenger rail; rail and truck commodities movement; transportation systems management; transportation demand management; and aviation.

The RTP is a policy guide for the Kern COG. As a policy document, the implementation recommendations contained herein are based on available funding sources, consistency with member jurisdiction's General Plans, and public input. Please note that consistency with General Plans will be confirmed on a project-by-project basis.

Date: 10/2/2009

Signature: Ron Brummet by DS
Ronald E. Brummett, Executive Director
Phone: 661-861-2191

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KERN COUNCIL OF GOVERNMENTS
2011 REGIONAL TRANSPORTATION PLAN

Project Description

The project, as defined by CEQA Statutes, Section 21065, is the preparation of the 2011 Regional Transportation Plan. Kern Council of Governments (Kern COG) is in the process of preparing the RTP as required by Section 65080 et seq., of Chapter 2.5 of the California Government Code as well as federal guidelines pursuant to the requirements of the Safe, Accountable, Flexible, Efficiency Transportation Equity Act: A Legacy for Users (SAFETEA-LU). The RTP must also meet Transportation Conformity for the Air Quality Attainment Plan per 40 CFR Part 51 and 40 CFR Part 93. In addition, the RTP must address requirements set forth in Assembly Bill 32, the California Global Warming Solutions Act of 2006. Finally, the California Transportation Commission has prepared guidelines (most recently adopted by the Commission on September 20, 2007 plus an Addendum addressing Climate Change and Greenhouse Gas Emissions adopted by the Commission on May 29, 2008) to assist in the preparation of RTPs pursuant to Section 14522 of the Government Code.

As the designated Regional Transportation Planning Agency (RTPA), Kern COG is mandated by state and federal law to update the Regional Transportation Plan every four (4) years. The 2007 RTP, adopted on May 17, 2007 by Kern COG, included a list financially constrained improvement projects. On January 15, 2009, Kern COG amended the 2007 RTP (Amendment #1) to reflect changes to the list of projects and certified an Addendum EIR (AEIR) to address potential environmental effects. Improved project financing sources and project delivery schedules reflected in the 2007 RTP and in Amendment #1 were revised again as part of RTP Amendment #2 approved on September 17, 2009.

The RTP is used to guide the development of the Regional Transportation Improvement Program (RTIP). The RTIP is the programming document used to plan the construction of regional transportation projects and requires State Department of Transportation (Caltrans) approval. No project-level assessments of environmental impacts will be addressed by this EIR. The RTP is also used as a transportation planning document by each of the twelve member jurisdictions of Kern COG. The members include the County of Kern and the cities of Arvin, Bakersfield, California City, Delano, Maricopa, McFarland, Ridgecrest, Shafter, Taft, Tehachapi, and Wasco.

The RTP identifies the region's mobility needs and issues through to the year 2035, sets forth an action plan of projects and programs to address the needs consistent with the adopted policies, and documents the financial resources needed to implement the plan. Additional areas of emphasis and policy initiatives in the 2011 RTP include Climate Change (including a Climate Change Plan and other greenhouse gas policies), Environmental Justice, Goods Movement, and Blueprint Planning. In addition, the 2011 RTP will include updated project lists and updated performance measures.

The RTP will include the following sections, which may be reorganized or modified as a result of staff and consultant review:

1. Transportation Planning Policies
2. Planning Assumptions
3. Strategic Transportation Investments
4. Financial Element
5. Environmental Justice
6. Future Links
7. Progress Monitoring (including the Congestion Management Program)

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Specific environmental issues to be addressed in the SEIR include:

- Aesthetics;
- Agricultural Resources;
- Air Quality;
- Biotic Resources;
- Cultural Resources;
- Geology/Soils;
- Hazards & Hazardous Materials;
- Hydrology/Water Quality;
- Land Use/Planning;
- Noise;
- Population/Housing;
- Public Utilities, Other Utilities & Services Systems;
- Transportation/Traffic; and
- Growth Inducement and Cumulative Effects.

The project boundaries are the lawfully adopted borders of Kern County, including the eleven incorporated cities and all unincorporated areas.

Requirement to Prepare a Subsequent EIR

According to CEQA, when an EIR has been certified or a negative declaration adopted for a project, no subsequent EIR shall be prepared for that project unless the lead agency determines, on the basis of substantial evidence in the light of the whole record, one or more of the following:

- Substantial changes are proposed in the project which will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;
- Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR or Negative Declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or
- New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete or the Negative Declaration was adopted, shows any of the following:
  - The project will have one or more significant effects not discussed in the previous EIR or negative declaration
  - Significant effects previously examined will be substantially more severe than shown in the previous EIR
  - Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative
  - Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

In this case, Kern COG understands that 2011 RTP improvement projects will change or the timing of those projects will change. As a result of these changes, rather than prepare a complete new EIR, Kern COG desires to use the previous EIR and Addendum No. 1 and Addendum No. 2 and update/change sections to address RTP project changes, as well as greenhouse gas/global warming (Climate Change) issues.

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Environmental Issues to be Addressed in the EIR

The programs and projects to be included in the RTP will be analyzed through development of a Program SEIR. This will allow Kern COG to analyze the regional or general impacts of the programs and projects. A more detailed or project level environmental assessment of the various projects included in the Plan will be conducted by the various responsible agencies including Caltrans, the County of Kern, and the cities within the County before the projects are constructed or implemented.

The key environmental issues to be addressed in the Program SEIR for the 2011 RTP include:

- **Aesthetics**

  Would the project:
  a) Have a substantial adverse effect on a scenic vista?
  b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?
  c) Substantially degrade the existing visual character or quality of the site and its surroundings?
  d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

- **Agriculture and Forest Resources**

  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 the forest carbon measurement methodology provided in the Forest Protocols adopted by the California Air Resources Board.

  Would the project:
  a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?
  b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?
  c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)) or timberland (as defined in Public Resources Code section 4526)?
  d) Result in the loss of forest land or conversion of forest land to non-forest use?
  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 or conversion of forest land to nonforest use?

- **Air Quality**

  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.

  Would the project:
  a) Conflict with or obstruct implementation of the applicable air quality plan?
  b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?
  c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?
  d) Expose sensitive receptors to substantial pollutant concentrations?
  e) Create objectionable odors affecting a substantial number of people?

- **Biological Resources**

  Would the project:
  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) 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?
  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?
  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?
  e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?
  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?

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- **Cultural Resources**

Would the project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?
d) Disturb any human remains, including those interred outside of formal cemeteries?

- **Geology and Soils**

Would the project:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
   i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42:
   ii) Strong seismic ground shaking?
   iii) Seismic-related ground failure, including liquefaction?
   iv) Landslides?
b) Result in substantial soil erosion or the loss of topsoil?
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

- **Greenhouse Gas Emissions**

Would the project:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?

- **Hazards and Hazardous Materials**

Would the project:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?
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?
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?
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?
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?
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?

- **Hydrology and Water Quality**

Would the project:

a) Violate any water quality standards or waste discharge requirements?
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)?
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?
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?
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?
f) Otherwise substantially degrade water quality?

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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 delineation map?
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?
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?
j) Inundation by seiche, tsunami, or mudflow?

- **Land Use and Planning**

Would the project:
a) Physically divide an established community?
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?
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

- **Noise**

Would the project result in:
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?
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?
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?
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?

- **Population and Housing**

Would the project:
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) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

- **Public Services**

Would the project:
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:
   - Fire protection?
   - Police protection?
   - Schools?
   - Parks?
   - Other public facilities?

- **Transportation and Traffic**

Would the project:
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)? Exceed the capacity of the existing circulation system, based on an applicable measure of effectiveness (as designated in a general plan policy, ordinance, etc.), taking into account all relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?
b) Exceed, either individually or cumulatively, a 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?
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?
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?
e) Result in inadequate emergency access?
f) Result in inadequate parking capacity?

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g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?

- **Utilities and Service Systems**

Would the project:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?
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?
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?
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?
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?
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?
g) Comply with federal, state, and local statutes and regulations related to solid waste?

- **Mandatory Findings of Significance**

Would the project:

a) Have the potential to: substantially 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; substantially reduce the number or restrict the range of an endangered, rare or threatened species; or eliminate important examples of the major periods of California history or prehistory?
b) Have the potential to achieve short-term environmental goals to the disadvantage of long-term environmental goals?
c) Have possible environmental effects that are individually limited but 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, the effects of other current projects, and the effects of probable future projects?
d) Cause substantial adverse effects on human beings, either directly or indirectly?

Prepared by: Marilyn Beardslee, Kern COG & Georgiena M. Vivian, VRPA Technologies, Inc. – September 28, 2009

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Explanation of the Notice of Completion Form

This form is ***required*** to be submitted with 15 copies of every draft Environmental Impact Report which is reviewed through the State Clearinghouse (see CEQA Guidelines Section 15085[d]). It is used by the Clearinghouse for transmittal of all environmental documents

LEAD AGENCY

Project Title: This is the project's common name. It is best to use project specific words in order to facilitate database searches.

Lead Agency: This is the name of the public agency that has legal responsibility for preparation and review of the environmental document.

Contact Person: Name of contact person from the lead agency. This should not be the consultant's name.

Phone: Phone number of the contact person at lead agency.

Street Address: This is the mailing address for the contact person from the lead agency. State comments will be mailed to this address.

City: City of the lead agency address. This is not necessarily the city in which the project is located.

Zip: Zip code of the lead agency. Please indicate the new nine digit zip code if applicable.

County: County of the lead agency address. This is not necessarily the county in which the project is located.

PROJECT LOCATION

County: County in which the project is located. Most state agencies assign projects for review according to the county of the project. The State Clearinghouse is not always able to determine the location of the project based upon the address of the lead agency. An example of this problem is Los Angeles Department of Airports projects located at Ontario International Airport.

City/Nearest Community: City or town in which the project is located; or the nearest community to the location of the project.

Cross Streets: Indicate the nearest major cross streets or cross streets.

Total Acres: The total area encompassed by the project site gives some indication of the scope of the project and its regional significance.

Assessor's Parcel Number (optional): For locational purposes.

Section, Township, Range and Base: Please indicate base meridian. If you are not able to provide Assessor's Parcel Number, please indicate Section, Township, and Range.

Highways, Airports, Railroads, Schools, and Waterways (including streams or lakes): These identifiers are of consequence to many projects. By restricting the information to those features within a two-mile radius of the project site, unnecessary data collection can be avoided. Please indicate the name(s) of the waterways, airports, railroads, schools, and the route number(s) of the state highways.

DOCUMENT TYPE

This identifies the nature of the environmental document. Mark appropriate blanks with an "X".

LOCAL ACTION TYPE

This helps reviewers understand the type of local approvals that will be required for the project and the nature of the project and its environmental documentation. Mark appropriate blanks with "X".

DEVELOPMENT TYPE

This data category helps identify the scope of the project for distribution purposes. Additionally, the information also serves to identify projects of a similar character to assist in the reuse of environmental documents. For some of the development types, the form asks for the number of acres, square footage, and number of permanent employees. Fill in the blanks.

PROJECT ISSUES DISCUSSED IN DOCUMENT

These are the topics on which the environmental document focuses attention. These are not necessarily the adverse impacts of the project, but the issues which are discussed in some depth. Check appropriate blanks.

PRESENT LAND USE AND ZONING

This enables the agencies to understand the extent of the changes proposed and again helps to identify projects with similar environmental issues for later reuse of information.

PROJECT DESCRIPTION

This response should provide a thorough description of the proposed project enabling the reviewing agencies to understand the total project concept. The data categories can provide guidance and structure to the explanation given.

Reviewing Agencies Checklist:

REVIEWING AGENCIES

The back of the form lists the agencies and departments to whom the SCH may distribute a draft document. The lead agency can indicate for the SCH's information any responsible, trustee or concerned agencies which they would like to review the document, or who have previously been involved in the review of the project. Any agencies that have received the document directly from the lead agency should also be marked.

PUBLIC REVIEW PERIOD

This section is to be filled in when the Notice of Completion form is being filed and not being submitted with environmental documents.

CONSULTING FIRM

This information is to be filled in only if applicable.

APPLICANT

This identifies whether the applicant/project proponent is a private developer or the lead agency.

Form A

Notice of Completion & Environmental Document Transmittal

SCH # _____

Mail to: State Clearinghouse, PO Box 3044, Sacramento, CA 95812-3044 916/445-0613

Project Title: 2011 Kern County Regional Transportation Plan

Lead Agency: Kern Council of Governments — Contact Person: Ms. Marilyn Beardslee

Street Address: 1401 19th St., Suite 300 — Phone: (661) 861-2191

City: Bakersfield — Zip: 93301 — County: Kern

Project Location:

County: Kern (All) — City/Nearest Community: Bakersfield and others

Cross Streets: — Zip Code: — Total Acres:

Assessor's Parcel No. — Section: — Twp. — Range: — Base:

Within 2 Miles: State Hwy #: — Waterways:

Airports: — Railways: — Schools:

Document Type:

CEQA: ☒ NOP ☐ Supplement/Subsequent EIR (Prior SCH No.) ☐ Early Cons ☐ Neg Dec ☐ Other ☐ Draft EIR

NEPA: ☐ NOI ☐ EA ☐ Draft EIS ☐ FONSI

Other: ☐ Joint Document ☐ Final Document ☐ Other

Local Action Type:

☐ General Plan Update ☐ General Plan Amendment ☐ General Plan Element ☐ Community Plan

☐ Specific Plan ☐ Master Plan ☐ Planned Unit Development ☐ Site Plan

☐ Rezone ☐ Prezone ☐ Use Permit ☐ Land Division (Subdivision, etc.)

☐ Annexation ☐ Redevelopment ☐ Coastal Permit ☒ Other RTP Update

Development Type:

☐ Residential: *Units* *Acres*

☐ Office: *Sq.ft.* *Acres* *Employees*

☐ Commercial: *Sq.ft.* *Acres* *Employees*

☐ Industrial: *Sq.ft.* *Acres* *Employees*

☐ Educational

☐ Recreational

☐ Water Facilities: *Type* *MGD*

☒ Transportation: *Type* Planned Transportation Facilities

☐ Mining: *Mineral*

☐ Power: *Type* *Watts*

☐ Waste Treatment: *Type*

☐ Hazardous Waste: *Type*

☐ Other:

Funding (approx.): Federal $ State $ Total $

Project Issues Discussed in Document:

☒ Aesthetic/Visual	☒ Flood Plain/Flooding	☐ Schools/Universities	☒ Water Quality
☒ Agricultural Land	☐ Forest Land/Fire Hazard	☐ Septic Systems	☒ Water Supply/Groundwater
☒ Air Quality	☒ Geologic/Seismic	☐ Sewer Capacity	☒ Wetland/Riparian
☒ Archeological/Historical	☒ Minerals	☒ Soil Erosion/Compaction/Grading	☒ Wildlife
☐ Coastal Zone	☒ Noise	☐ Solid Waste	☒ Growth Inducing
☒ Drainage/Absorption	☒ Population/Housing Balance	☒ Toxic/Hazardous	☒ Landuse
☐ Economic/Jobs	☒ Public Services/Facilities	☒ Traffic/Circulation	☒ Cumulative Effects
☐ Fiscal	☒ Recreation/Parks	☒ Vegetation	☐ Other

Present Land Use/Zoning/General Plan Designation:

Various

Project Description:

Preparation and approval of the 2011 Kern County Regional Transportation Plan (RTP). See attached.

Revised 3-31-99

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Reviewing Agencies Checklist

Form A, continued

KEY
S = Document sent by lead agency
X = Document sent by SCH
✓ = Suggested distribution

____**Resources Agency**
____Boating & Waterways
____Coastal Commission
____Coastal Conservancy
____Colorado River Board
____Conservation
____Fish & Game
____Forestry & Fire Protection
____Office of Historic Preservation
____Parks & Recreation
____Reclamation Board
____S.F. Bay Conservation & Development Commission
____Water Resources (DWR)

Business, Transportation & Housing
____Aeronautics
____California Highway Patrol
____CALTRANS District #_____
____Department of Transportation Planning (headquarters)
____Housing & Community Development

____**Food & Agriculture**

Health & Welfare
____Health Services _____

State & Consumer Services
____General Services
____OLA (Schools)

Environmental Protection Agency
____Air Resources Board
____California Waste Management Board
____SWRCB: Clean Water Grants
____SWRCB: Delta Unit
____SWRCB: Water Quality
____SWRCB: Water Rights
____Regional WQCB #_____ (_____)

Youth & Adult Corrections
____Corrections

Independent Commissions & Offices
____Energy Commission
____Native American Heritage Commission
____Public Utilities Commission
____Santa Monica Mountains Conservancy
____State Lands Commission
____Tahoe Regional Planning Agency

____Other _____

Public Review Period (to be filled in by lead agency)

Starting Date October 5, 2009 Ending Date November 4 2009

Signature _____ Date September 28, 2009

Lead Agency (Complete if applicable):
Consulting Firm: VRPA Technologies, Inc.
Address: 4630 W. Jennifer, Suite 105
City/State/Zip: Fresno, CA 93722
Contact: Ms. Georgiena Vivian, Principal
Phone: (559) 271-1200 or (559) 259-9257

Applicant: Kern COG, Ms. Marilyn Beardslee
Address: 1401 19th St., Suite 300
City/State/Zip: Bakersfield CA 93301
Phone: (661) 861-2191

For SCH Use Only:
Date Received at SCH _____
Date Review Starts _____
Date to Agencies _____
Date to SCH _____
Clearance Date _____
Notes:

APPENDIX B – NOTICE OF PREPARATION COMMENTS RECEIVED

STATE OF CALIFORNIA
GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH
STATE CLEARINGHOUSE AND PLANNING UNIT

ARNOLD SCHWARZENEGGER
GOVERNOR

CYNTHIA BRYANT
DIRECTOR

Notice of Preparation

RECEIVED
OCT 0 8 2009
KERN COUNCIL
OF GOVERNMENTS

October 5, 2009

To: Reviewing Agencies

Re: 2011 Kern County Regional Transportation Plan
SCH# 2006111119

Attached for your review and comment is the Notice of Preparation (NOP) for the 2011 Kern County Regional Transportation Plan draft Environmental Impact Report (EIR).

Responsible agencies must transmit their comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of the NOP from the Lead Agency. This is a courtesy notice provided by the State Clearinghouse with a reminder for you to comment in a timely manner. We encourage other agencies to also respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

Ms. Marilyn Beardslee
Kern Council of Governments
1401 19th Street, Suite 300
Bakersfield, CA 93301

with a copy to the State Clearinghouse in the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the environmental document review process, please call the State Clearinghouse at (916) 445-0613.

Sincerely,

Scott Morgan
Acting Director

Attachments
cc: Lead Agency

1400 10th Street P.O. Box 3044 Sacramento, California 95812-3044
(916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

NOP Distribution List

County: Kern

SCH#

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- Fish & Game Region 6 IM — Gabrina Gatchel, Inyo/Mono, Habitat Conservation Program
- Dept. of Fish & Game M — George Isaac, Marine Region

Other Departments

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- Depart. of General Services — Public School Construction
- Dept. of General Services — Anna Garbolt, Environmental Services Section
- Dept. of Public Health — Bridgette Binning, Dept. of Health/Drinking Water

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- Caltrans - Planning — Terri Pencovic
- California Highway Patrol — Scott Loetscher, Office of Special Projects
- Housing & Community Development — CEQA Coordinator, Housing Policy Division

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Cal EPA

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- Industrial Projects — Mike Tollstrup
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- State Water Resources Control Board — Regional Programs Unit, Division of Financial Assistance
- State Water Resources Control Board — Student Intern, 401 Water Quality Certification Unit, Division of Water Quality
- State Water Resources Control Board — Steven Herrera, Division of Water Rights
- Dept. of Toxic Substances Control — CEQA Tracking Center
- Department of Pesticide Regulation — CEQA Coordinator

Regional Water Quality Control Board (RWQCB)

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- RWQCB 2 — Environmental Document Coordinator, San Francisco Bay Region (2)
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- RWQCB 5S — Central Valley Region (5)
- RWQCB 5F — Central Valley Region (5), Fresno Branch Office
- RWQCB 5R — Central Valley Region (5), Redding Branch Office
- RWQCB 6 — Lahontan Region (6)
- RWQCB 6V — Lahontan Region (6), Victorville Branch Office
- RWQCB 7 — Colorado River Basin Region (7)
- RWQCB 8 — Santa Ana Region (8)
- RWQCB 9 — San Diego Region (9)
- Other _____

Last Updated on 03/24/2009

"PROTECTING OUR GREAT NATIONAL HERITAGE"

THE KERN AUDUBON SOCIETY
P.O. Box 3581 Bakersfield, CA 93385

October 7, 2009

Kern Council of Government
Attn: Ronald Brummett
1401 19th St., Suite 300
Bakersfield, CA 93301

RE: Subsequent Environmental Impact Report (S.E.I.R.) for the 2011 Regional Transportation Plan

Dear Mr. Brummett,

Kern Audubon Society wishes to offer advice and comments about the scope and content of the environmental information to be found the draft document. The following comments and directives are supported by the Audubon Society.

1. We favor the most energy and land conserving, and least polluting systems and vehicles.

2. The plan must support the ideas that walking and bicycling are best, along with electronic communications to reduce trips. Next are buses, minibuses, light rail and heavy rail (as corridor trips increase); electrified wherever feasible. Mass transit station access should be provided by foot, bicycle, with minimal, but full-priced, public parking. Accommodation of pedestrians, bicycles and public transit should be given priority over private automobiles.

3. Public transit service should be coordinated, and transit facilities should facilitate intermodal transfers, including convenient and safe bicycle access to public transit vehicles, and secure bicycle storage in public places and stations. Multiple occupancy vehicles should be favored over single occupancy vehicles. Roads and traffic laws should be designed and enforced to enhance safety.

4. High occupancy vehicle (HOV) and high occupancy vehicle/toll (HOT) lanes should come from converting existing highway lanes rather than constructing new lanes. This avoids constructing new lanes which are mixed-flow much of the day, or are converted to full-time mixed-flow after construction. Toll rates on HOT lanes should vary by time of day, and revenues above operating expenses should be used to improve travel opportunities for low income travelers and to operate public transit. Implement Transport Control Measures rather than increasing road capacity for vehicles. Intelligent Vehicle/Highway Systems (IVHS)

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should not be designed to increase highway capacity and stimulate additional traffic, off-highway congestion, sprawl, energy consumption and pollution.

5. Land use patterns should be designed to improve pedestrian access, encourage shorter trips, increase public transit use, enhance the economic viability of public transit and decrease private motor vehicle use (auto mobility). Therefore zoning, financing, land-use controls and other policies should:

- concentrate employment near transit stations or stops;
- provide pedestrian amenities (such as a complete regular pedestrian street grid; sidewalks on both sides of the road; slow streets [traffic calming], speed limits and stop signs or lights to keep traffic safe and comfortable for pedestrians; auto-free town and urban centers; street furniture and shelters; and buildings that front onto the sidewalk rather than be isolated behind parking or landscaped areas);
- reduce parking requirements and eliminate parking subsidies;
- provide adequate parks, natural areas and plantings for humans and wildlife, aesthetic enhancement, pedestrian protection and building/ sidewalk cooling; and

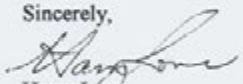
6. Realizing the fossil fueled vehicles will be reduced in the future, the plan must consider new fuels, such as electric and hydrogen, and provide refueling facilities. Incentives to owners of such vehicles (parking location, driving preferences) must be adopted.

7. Public transportation alternative must have the highest priority in the plan. Incentive to employers who adopt a plan for employees to use public transportation must be considered (e.g. reduced property tax, roadside advertising) must be considered. On this topic, we encourage an 'out of the box' approach.

8. Special events (e.g. county fair, concerts, sporting events) that invite a large number of people to drive to the event, thus causing traffic and parking problems, must be addressed in the plan. Public transit as a means of attending the event must be considered and encouraged. Incentives for public transportation along with disincentives for private car transportation must be considered. An example to follow would be the City of Denver when it comes to sports. The city metro line has special routes/times/pricing for those who attend a Rockies or Broncos event. Buses have priority parking. In the city of Bakersfield, G.E.T. can perform this function. Those in charge of events can offer a reduced price for tickets for people who show a bus pass upon admission. Again, to think 'out of the box' is critical in developing a fully functional mass transit plan that is consumer friendly.

The sincerely hope that the above recommendation be incorporated in the SEIR and we look forward to your response.

Sincerely,



Harry Love
Conservation Chair

2

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION
DIVISION OF AERONAUTICS – M.S.#40
1120 N STREET
P. O. BOX 942874
SACRAMENTO, CA 94274-0001
PHONE (916) 654-4959
FAX (916) 653-9531
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KERN COUNCIL
OF GOVERNMENTS

Flex your power!
Be energy efficient!

October 27, 2009

Mr. Ronald E. Brummett
Kern Council of Governments
1401 19th Street, Suite 300
Bakersfield, CA 93301

Dear Mr. Brummett:

Notice of Preparation of a Draft Environmental Impact Report for the 2011 Kern County Regional Transportation Plan

The California Department of Transportation (Caltrans), Division of Aeronautics (Division), reviewed the above-referenced document with respect to airport-related noise and safety impacts and regional aviation land use planning issues pursuant to the California Environmental Quality Act (CEQA). The Division has technical expertise in the areas of airport operations safety and airport land use compatibility. We are a funding agency for airport projects and we have permit authority for public-use and special-use airports and heliports.

The proposal is for the Kern County Regional Transportation Plan (RTP). According to the Notice of Preparation (NOP), the RTP examines a full range of transportation issues, opportunities and needs facing Kern County. It also provides goals, objectives, and policies to guide the identification and implementation of future transportation improvements for all modes, including: public transit, highways, streets and roads; bikeways and pedestrian; passenger rail; rail and truck commodities movement; transportation systems management; transportation demand management; and aviation.

Within Kern County are numerous airports and heliports including the following public-use airports: Bakersfield Municipal, California City, Delano, Elk Hills-Buttonwillow, Inyokern, Kern Valley, Lost Hills, Meadows Field, Mojave, Mountain Valley, Poso, Rosamond Skypark, Shafter-Minter, Taft, Tehachapi Municipal, and Wasco.

Aviation plays a significant role in California's transportation system. The regional transportation planning process provides the opportunity to discuss the connection between land use and transportation planning and should address regional aviation issues and needs. Strong and effective local, regional, and state policies minimize adverse impacts arising from the encroachment of incompatible land uses around airports, adverse noise impacts on communities near airports, and congestion and/or delays related to airport ground access.

The protection of airports from incompatible land use encroachment is vital to the safety of airport operations and the well being of the communities around airports. As discussed in the Division's "Aviation Planning Guidelines for Regional Transportation Plans" the best way to preserve and improve airports and their associated economic and quality-of-life benefits is to take timely proactive measures. Incompatible land uses around airports often result in public pressure to restrict operations (curfews, aircraft size limits, etc.), and impose noise, and growth controls. Failure to protect the airport may result

"Caltrans improves mobility across California"

in permanent closure, thereby reducing or eliminating its benefits. The Division's RTP Guidelines are available at http://www.dot.ca.gov/hq/planning/aeronaut/documents/rtpSept2009guidelines.pdf. For questions concerning these guidelines, please contact the Division's liaison for Kern County RTP review, Carol Glatfelter at (916) 654-5253.

The California Airport Land Use Planning Handbook (Handbook) is also an excellent resource that should be applied to all public use airports. The Handbook is available on-line at http://www.dot.ca.gov/hq/planning/aeronaut/htmlfile/landuse.php.

Aviation plays a significant role in California's transportation system. This role includes the movement of people and goods within and beyond our State's network of over 250 airports. Aviation contributes nearly 9 percent of both total State employment (1.7 million jobs) and total State output of $110.7 billion annually. Aviation improves mobility, generates tax revenue, saves lives through emergency response, medical and fire fighting services, annually transports air cargo valued at over $170 billion and generates over $14 billion in tourist dollars, which in turn improves our economy and quality of life. These benefits were identified in a study entitled "Aviation in California: Benefits to Our Economy and Way of Life" available on-line at http://www.dot.ca.gov/hq/planning/aeronaut/econstudy2003.html.

Although the need for compatible and safe land uses near airports is both a local and State issue, it is also a regional issue. Airport staff, Airport Land Use Commissions (ALUC) and airport land use compatibility plans are key to protecting an airport and the people residing and working in the vicinity of an airport. Coordinating the RTP with these other agencies should help to relieve future conflicts between airports and their neighbors.

These comments reflect the areas of concern to the Division of Aeronautics with respect to airport-related noise, safety, and regional land use planning issues. We advise you to contact our District 6 office concerning surface transportation issues.

Thank you for the opportunity to review and comment on this proposal. If you have any questions, please call me at (916) 654-5314 or by email at sandy.hesnard@dot.ca.gov.

Sincerely,

SANDY HESNARD
Aviation Environmental Specialist

bc: Terri Pencovic-DOTP, Sharri Bender-Ehlert-Dist 6, Michael Navarro-Dist 6

"Caltrans improves mobility across California"

U.S. Department of Transportation
Federal Highway Administration

Federal Highway Administration
California Division

650 Capitol Mall, Suite 4-100
Sacramento, CA 95814
(916) 498-5001
(916) 498-5008 (fax)

November 3, 2009

In Reply Refer To:
HDA-CA

Mr. Ronald E. Brummett, Executive Director
Kern Council of Governments
1401 19th Street
Suite 300
Bakersfield, CA 93301

Mr. Randell Iwasaki, Director
California Department of Transportation
1120 N Street
Sacramento, CA 95814

Attention: Federal Resources Office, M.S. 82
For Rachel Falsetti, Division of Transportation Programming

Dear Mr. Brummett and Mr. Iwasaki:

SUBJECT: KCOG Amendment #8 to the 2009 FTIP, Amendment # 2 to the 2007 RTP and Associated Air Quality Conformity Determination

The Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) have completed the review of Amendment # 8 to the Kern Council of Governments' (KCOG) 2009 Federal Transportation Improvement Program (FTIP) and the 2007 Regional Transportation Plan (RTP) Amendment # 2 and the accompanying required Air Quality Conformity Determination that was submitted by your letter dated October 20, 2009. KCOG approved the Amendment #8 to the 2009 FTIP, Amendment # 2 to the 2007 RTP and the accompanying Air Quality Conformity Determination on September 17, 2009. These amendments to KCOG's FTIP and RTP:

- Include four new projects, modifies six grouped projects and modifies sixteen existing projects in Kern County. This includes projects with funds from the American Recovery and Reinvestment Act (Recovery Act) of 2009, Congestion Mitigation and Air Quality Improvement Program (CMAQ) and local funds and requires approval of a new conformity determination for all of the MPOs in the San Joaquin Valley.

Pursuant to the July 15, 2004, *Memorandum of Understanding between the Federal Highway Administration, California Division, and the Federal Transit Administration, Region IX,* we accept the modifications to the 2008/09 – 2011/12 Federal Statewide Transportation Improvement Program (FSTIP) and the 2007 RTP for the KCOG region in accordance with the Final Rule on Statewide and Metropolitan Transportation Planning published in the February 14, 2007 Federal Register. We find that the KCOG's 2008/09 FTIP through Amendment # 8 and the 2007 RTP through Amendment # 2 were developed through a continuing, cooperative and comprehensive transportation planning process carried out in

accordance with the metropolitan planning provisions of 23 U.S.C. 134, and 49 U.S.C. Chapter 53 as amended by Section 6001 of Public Law 109-59, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU).

This amendment acceptance is pursuant to a joint FHWA and FTA air quality conformity determination for the amended SJCOG FY 2008/09 – 2011/12 FTIP. This joint FHWA/FTA air quality conformity determination for the amended SJCOG FY 2008/09 - 2011/12 FTIP and the 2007 RTP is required by the Environmental Protection Agency's (EPA) Transportation Conformity Rule, 40 CFR Parts 51 and 93, and the FHWA/FTA Metropolitan Planning Regulations, 23 CFR Part 450.

This finding has been coordinated with EPA Region 9 in accordance with the procedures outlined in the *National Memorandum of Understanding between DOT and EPA on Transportation Conformity*, dated April 25, 2000. Therefore, we find that KCOG's 2008/09 FTIP through Amendment # 8 and 2007 RTP through Amendment # 2 conforms to the applicable State Implementation Plan (SIP) and this conformity determination also applies to the other 7 San Joaquin Valley MPOs (StanCOG, MCAG, MCTC, Fresno COG, TCAG, KCAG and SJCOG).

This approval is provided with the understanding that the FTA funding approval on the individual projects contained in the FSTIP are subject to grantees meeting all necessary FTA administrative requirements, and that approval of this programming action does not provide a federal eligibility determination for CMAQ projects or any other project funding source included in this amendment.

If you have questions or need additional information concerning our approval for this KCOG FSTIP amendment, please contact Joseph Vaughn (Joseph.Vaughn@dot.gov) of the FHWA California Division office at (916) 498-5346.

Sincerely,

/s/ Leslie T. Rogers

Leslie T. Rogers
Regional Administrator
Federal Transit Administration

/s/ Steve Luxenberg

For
Walter C. Waidelich, Jr.
Division Administrator
Federal Highway Administration

cc: (e-mail)
Ray Sukys, FTA
Paul Page, FTA
Dennis Jacobs, Caltrans HQ
Raquel Pacheco, KCOG
Vince Harris, StanCOG
Jesse B. Brown, MCAG
Derek Winning, MCTC
Barbara Steck, Fresno COG
George Finney, TCAG
Terri King, KCAG
Andy Chesley, SJCOG

cc: (other)
KCOG TIP Binder

RESOURCE MANAGEMENT AGENCY

county of ventura

Planning Division
Kimberly L. Rodriguez
Director

November 6, 2009

Kern Council of Governments
1401 19th St., Ste. 300
Bakersfield, CA 93301
Attn.: Ron Brummett

E-mail: rbrummett@kerncog.org

Subject: Comments on NOP – SEIR for the 2011 Regional Transportation Plan

Dear Mr. Brummett:

Thank you for the opportunity to review and comment on the subject document. Attached are the comments that we have received resulting from intra-county review of the subject document. Additional comments may have been sent directly to you by other County agencies.

Your proposed responses to these comments should be sent directly to the commenter, with a copy to Laura Hocking, Ventura County Planning Division, L#1740, 800 S. Victoria Avenue, Ventura, CA 93009.

If you have any questions regarding any of the comments, please contact the appropriate respondent. Overall questions may be directed to Laura Hocking at (805) 654-2443.

Sincerely,

Bruce Smith, FOR

Tricia Maier, Manager
Program Administration Section

Attachment

County RMA Reference Number 08-020-2

800 South Victoria Avenue, L# 1740, Ventura, CA 93009 (805) 654-2481 Fax (805) 654-2509

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

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OF GOVERNMENTS

Mr. Ronald Brummett
Executive Director
Kern Council of Governments
1401 19th Street, Suite 300
Bakersfield, CA 93301

Subject: US EPA Comments on the Notice of Preparation of a Subsequent Environmental Impact Report for the 2011 Regional Transportation Plan

Dear Mr. Brummett:

The United States Environmental Protection Agency (EPA) appreciates the opportunity to provide feedback on the scope and content of the environmental information to be included in the 2011 Regional Transportation Plan (RTP) for Kern County and its corresponding Subsequent Environmental Impact Report (SEIR). Thank you for offering to accept EPA's comments two weeks past the comment deadline. EPA is committed to the goal of incorporating environmental considerations early in the planning process. Early coordination results in greater opportunities to avoid sensitive resources and minimize impacts associated with future transportation projects.

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) directs metropolitan planning organizations (MPOs) to consult with resource agencies while developing long-range transportation plans (LRTPs). It also states that LRTPs must include "a discussion of types of potential environmental mitigation activities and potential areas to carry out these activities, including activities that may have the greatest potential to restore and maintain the environmental functions affected by the plan." EPA has reviewed the Notice of Preparation (NOP) for the RTP and the SEIR, and provides the following comments in support of compliance with SAFETEA-LU requirements. In addition, we have enclosed a fact sheet which provides guidance for complying with these requirements.

Kern Blueprint

The Kern Council of Governments (Kern COG) has developed the Kern Regional Blueprint Program described in a December 2008 final report. We encourage Kern COG to contact local resource agencies to obtain resource data and other expertise to consider during the planning process and to utilize data and the results to date of the Kern Blueprint process to inform development of the RTP. Successful implementation of

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the Kern Blueprint could be encouraged by supportive transportation investments included in the RTP.

The RTP should state how the information provided in the Kern Blueprint will inform the decision-making behind the projects already proposed in the existing RTP that will carry forward into the 2011 RTP. EPA recommends that, at a regional level, the RTP identify how proposed transportation projects have been planned to (1) maximize use of existing infrastructure, such as, improvements to existing roadways and transit service, and (2) avoid and minimize high quality resources and habitat. The RTP should also identify what design and route network location decisions were proposed in order to avoid and/or minimize impacts to resources. It should be clear how information about resources, including the policies of the Kern Blueprint, has informed decisions about the route network.

Identification of Avoidance Areas

In all projects, EPA encourages agencies to first avoid, then minimize, and finally mitigate environmental impacts of their actions. Early consultation with resource agencies, as suggested above, can provide opportunities for the Kern COG to identify areas that are resource-rich, and therefore should be avoided when planning new transportation infrastructure. It is our hope that information gained in this early consultation will inform transportation decision-making by identifying areas that should be avoided in order to preserve resources and reduce compensation costs. EPA recommends that Kern COG follow the process that was used in the Merced County Partnership for Integrated Planning, particularly how environmental information was integrated into Merced County's LRTP (http://www.dot.ca.gov/hq/tpp/offices/orip/pip.html).

EPA is particularly concerned about: 1) projects in urbanized and heavily impacted resource areas; 2) development in rapidly growing areas with large and/or remnant intact ecosystems; and 3) projects at the urban fringe with potential to impact resources.

Maintaining naturally functioning ecosystems, such as streams and wetlands, is critical to protecting water quality, habitat, and natural flood control capacity. Data on wetland areas, wildlife habitat, and other sensitive resources should be used to identify avoidance areas and to ultimately develop a regional plan for proposed open space and functioning ecosystem areas. The attached fact sheet provides a list of data sources. Consider interviewing staff biologists of local, state, or federal agencies or nonprofit environmental organizations that have responsibility for, or interest in, Kern County to determine whether other data sets or resource information are available.

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Greenhouse Gas Emissions

The State of California has increased its focus on potential climate change and impacts of increasing greenhouse gas emissions. Specifically, the Global Warming Solutions Act of 2006 and Executive Order S-3-05 recognize the impact that climate change can have within California and provide direction for future reductions of greenhouse gases. Senate Bill 375 (SB 375) is aimed at curbing sprawl and reducing vehicle miles traveled in an effort to cut greenhouse gas emissions. SB 375 requires MPOs to develop a "sustainable communities strategy" (SCS), which demonstrates how the region will meet greenhouse gas emissions reduction targets set by CARB.

The State of California is also a 2009 recipient of EPA's Smart Growth Implementation Assistance (SGIA). The State of California requested assistance in developing a local government sustainable community framework to provide guidance to local jurisdictions in determining which combination of greenhouse gas emission reduction strategies, smart growth practices, and sustainability policies are best for their communities. At the Federal level under the Partnership for Sustainable Communities, EPA, the U.S. Department of Housing and Urban Development, and the U.S. Department of Transportation are working together to help improve access to affordable housing, more transportation options, and lower transportation costs while protecting the environment in communities nationwide. The U.S. Department of Housing and Urban Development and the U.S. Department of Transportation will assist EPA in implementing the SGIA for the State of California.

EPA recommends that, as practicable, the SEIR identify the cumulative contributions to greenhouse gas emissions that will result from implementation of the projects contained in the RTP. As Kern COG continues to refine how to comply with state climate change related regulations, EPA encourages Kern COG to fully consider the indirect land use impacts associated with transportation projects. Specifically, estimates of the overall RTP's contributions to greenhouse gas emissions should consider any induced growth that transportation projects may contribute to. The RTP should specifically identify how the integration of "smart" land use strategies has been considered with each proposed transportation project. EPA also encourages Kern COG to consider strategies to facilitate reduced vehicle miles traveled, while still meeting the transportation needs of the region and to quantify the benefit of open space and undeveloped land within an overall strategy to reduce greenhouse gas emissions.

EPA also recommends that the SEIR discuss the potential impacts of climate change on the projects in the RTP and describe how the projects contained in the RTP meet the intent of statewide and national sustainability initiatives and goals to develop sustainable communities. Kern COG should identify if there are specific mitigation measures needed to 1) protect projects from the effects of climate change, 2) reduce the projects' adverse air quality effects, and/or 3) promote pollution prevention or

3

environmental stewardship.

Air Quality

In addition to analyzing whether the RTP contributes to increases in air pollution levels, the RTP and SEIR should also consider the potential construction-related impacts to air quality from all proposed projects. The RTP and SEIR should discuss regional land use and transportation policies, such as increased investment in public transit and incentives for compact, mixed-use development, and the link that those projects have to improving air quality and reducing greenhouse gas emissions.

EPA's air planning staff has an established relationship with Kern COG for transportation conformity consultation (40 CFR 93.105) and will undergo separate discussions with Kern COG on conformity. Land use assumptions related to "sustainable community strategies" should be reasonable, best available, and consistent with the transportation system planned to meet federal conformity requirements. If you have conformity-related or air quality questions on the RTP, please contact Karina O'Connor of our Air Planning Office at 775-833-1276 or oconnor.karina@epa.gov.

Near-roadway Health Impacts

Many studies have measured elevated concentrations of pollutants emitted directly by motor vehicles near large roadways. These elevated concentrations generally occur within approximately 200 meters of the road, although the distance may vary depending on traffic and environmental conditions. Pollutants measured with elevated concentrations include benzene, polycyclic aromatic hydrocarbons, carbon monoxide, nitrogen dioxide, black carbon, and coarse, fine, and ultrafine particles. For a thorough review of near-roadway monitoring studies, see Section 3.1.3 of EPA's "Regulatory Impact Analysis: Control of Hazardous Air Pollutants from Mobile Sources" (February 2007, http://www.epa.gov/otaq/regs/toxics/fr-ria-sections.htm).

A large number of recent studies have examined the association between living near major roads and different adverse health endpoints. Several well-conducted epidemiologic studies have shown associations with cardiovascular effects, premature adult mortality, and adverse birth outcomes, including low birth weight and size. Traffic-related pollutants have been repeatedly associated with increased prevalence of asthma-related respiratory symptoms in children. Also, based on toxicological and occupational epidemiologic literature, several of the mobile source air toxics (MSAT), including benzene, 1,3-butadiene, and diesel exhaust, are classified as known and likely human carcinogens. Thus, cancer risk, including childhood leukemia, is a potential concern in near roadway environments. For additional information on MSATs, please see EPA's MSAT website http://www.epa.gov/otaq/toxics.htm.

Given the significant concerns about adverse health effects from mobile source pollutants and the RTP's potential to include projects in close proximity to residential communities and sensitive receptors, EPA recommends discussing near-roadway health

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impacts in the SEIR and performing an analysis of potential MSAT impacts to inform decision-making and to inform avoidance, minimization, and mitigation options. For additional information on modeling and ideas for mitigation measures, see the July 2009 California Air Pollution Control Officers Association (CAPCOA) guidance document entitled "Health Risk Assessments for Proposed Land Use Projects" available on-line at: http://www.capcoa.org/rokdownloads/HRA/CAPCOA_HRA_LU_Guidelines_8-6-09.pdf

Induced Growth

EPA supports Kern COG's intention to specifically address growth-inducing effects in the SEIR and encourages Kern COG to emphasize in the RTP that proposed locations of projects are tentative and that final decisions on locating transportation facilities are made during project development after public comment and compliance with regulatory requirements. Proposed projects in the RTP may influence private investment in land parcels for future development, resulting in transportation project planning challenges, rising right-of-way costs, and difficulty meeting regulatory requirements and achieving the best environmental outcomes. In addition, decisions regarding the location of proposed projects in the RTP may influence the timing and location of future growth. EPA recommends that Kern COG consider the methodology outlined in the Caltrans Growth Related Impacts Guidance (http://www.dot.ca.gov/ser/Growth-related_IndirectImpactAnalysis/gri_guidance.htm#intro).

Cumulative Impacts

EPA recommends that Kern COG include an analysis in the SEIR of the potential cumulative impacts of the projects included in the RTP on all resource areas. Examining the potential impacts of all proposed projects on a regional level and with attention paid to the timeframes for project development can offer a more complete analysis of effects on resources. Cumulative impacts analyses should include information regarding future proposed development contained in city and county general plans and proposed updates. EPA recommends that Kern COG consider the methodology outlined in the Caltrans Cumulative Impact Guidance (http://www.dot.ca.gov/ser/cumulative_guidance/purpose.htm).

Project-Level Mitigation Guidelines

EPA recommends that Kern COG include innovative project-level mitigation guidelines or recommendations in the SEIR. Consultation with other agencies, such as the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, California Department of Fish and Game, Regional Water Quality Control Boards, and San Joaquin Valley and Kern County Air Pollution Control Districts, could provide recommendations of "state of the art" design features for transportation projects to incorporate to avoid and minimize impacts.

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Additional Resources

For beneficial reuse ideas in transportation projects, attached are EPA fact sheets on the use of compost-based materials for stormwater/erosion control and the use of recycled industrial materials in road construction (Enclosures).

EPA values the opportunity for involvement in the regional transportation planning process. We hope that this involvement will lead to more efficient project planning and improved environmental outcomes. If you have any questions about our comments, feel free to contact me at (415) 947-4188.

Sincerely,

Susan Sturges, Life Scientist
Environmental Review Office

Enclosures:
SAFETEA-LU Section 6001 Environmental Provisions Fact Sheet
Compost-based Stormwater Best Management Practices
Using Recycled Industrial Materials in Roadways

cc: Sharon Scherzinger, Caltrans
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SAFETEA-LU SECTION 6001 ENVIRONMENTAL PROVISIONS

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) is the federal surface transportation law passed in August 2005. Section 6001 of SAFETEA-LU describes the transportation planning regulations that the Federal Highway Administration and the Federal Transit Administration oversee. Section 6001 contains provisions that relate to environmental resources:

- **Consultation**: Metropolitan planning organizations (MPOs) must consult with agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation during development of long-range transportation plans.
- **Mitigation**: Long-range transportation plans must include "a discussion of types of potential environmental mitigation activities and potential areas to carry out these activities, including activities that may have the greatest potential to restore and maintain the environmental functions affected by the plan."

Following are tips for MPOs in fulfilling the requirements of Section 6001:

- An optimal goal of coordination between resource and transportation planning is the **transferability of plan-level goals and objectives or purpose and need statements to project-level purpose and need statements**. For consistency with NEPA:
  - ✓ Coordinate and share information early with resource agencies to balance the purpose and need for transportation improvements with potential impacts to the environment.
  - ✓ Consider obtaining feedback from resource agencies for the purpose and need of the plan and major transportation projects identified in the plan.
  - ✓ Create a purpose and need that is a statement of a transportation problem, not a specific solution. The statement should be broad enough for a reasonable range of alternatives, yet specific enough to identify alternatives to yield potential real solutions to the problem at hand.

- The long-range planning process occurs at a regional scale, so a detailed level of environmental information is not expected. However, at a minimum, EPA expects plans to show how **proposed corridor and project alternatives**:
  - ✓ Maximize use of existing infrastructure, such as improvements to existing roadways and transit service.
  - ✓ Avoid and minimize environmental impacts, especially in areas such as high quality habitat, wildlife corridors, or other resource-specific target areas.

- Plans should include a **mitigation strategy that promotes regional avoidance, minimization, and mitigation** to preserve pristine areas, or restore or enhance areas with the greatest potential for success:
  - ✓ Use resource data to *inform* transportation decisionmaking.
  - ✓ Use conservation plans and recovery plans to identify critical wildlife corridors, the most important areas to protect for sensitive species, and areas with a high concentration of resources.
  - ✓ Consider conservation plans with as much weight as General (Land Use) Plans when planning transportation investments.

- ✓ Incorporate concepts such as 100 to 200 foot buffers for stream corridors and identification and improvement to priority culverts that restrict wildlife corridors and natural processes of stream and river systems.
- ✓ Use parcel maps to identify larger, undivided parcels for ease of acquisition and preservation and designate areas as potential future mitigation sites.

- Potential **data sources** include:
  - ✓ U.S. Fish & Wildlife Service and National Marine Fisheries Service species recovery plans
  - ✓ California Department of Fish and Game Statewide Wildlife Action Plan
  - ✓ USDA Natural Resources Conservation Service wetland data
  - ✓ County Habitat Conservation Plans
  - ✓ California Wilderness Coalition, *Missing Linkages* report on wildlife corridors
  - ✓ Nature Conservancy
  - ✓ Local non-profit and land trust groups
  - ✓ Caltrans' Cumulative Impact Guidance has information on data gathering: http://www.dot.ca.gov/ser/cumulative_guidance/data_gathering.htm#exhibitb

- Plans should establish the foundation for **innovative regional mitigation solutions**:
  - o Establish financial mechanisms to fund mitigation, such as development fees (MCAG), sales tax (SANDAG), or the use of funds from BLM land sales to identify and protect critical resource areas.
  - o Establish conservation easements that connect to and expand existing conservation areas.
  - o Describe locally-developed measures such as county/city designation of open-space, measures requiring development set-backs near streams, etc.

EPA supports the integrated planning sought by these provisions:

- **Early investment in comprehensive planning can be efficient**. Linking land-use and transportation planning with NEPA principles can help reduce project-level delays by reaching early agreement on resource protection areas and appropriate range of alternatives.

- **Early coordination with resource agencies can increase project certainty and improve environmental outcomes.** MPOs should involve resource agencies at *key* decision-making points. Resource agencies have limited staff to participate in the entire process.

- **Integration of environmental factors and transportation planning must be comprehensive.** The analysis must include impacts to all environmental resources – habitat, water quality, environmental justice, in addition to air quality conformity analysis.

- **EPA is particularly concerned about: 1) projects in highly urbanized and heavily impacted resource areas; 2) development in rapidly growing areas with large, intact ecosystems; and 3) projects at the urban fringe with potential to impact resources.** Maintaining natural ecosystem functions, such as natural desert washes, is critical to protect water quality, habitat, and natural flood control capacity.

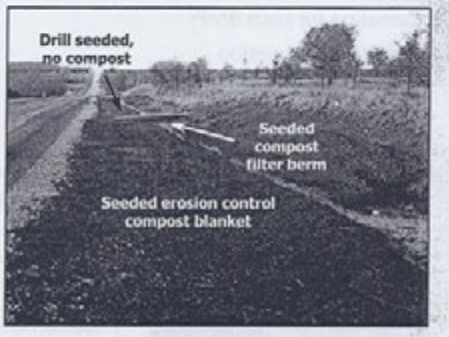
Compost-Based Stormwater Best Managen ent Practices

Compost-based stormwater best management practices (BMPs) meld two important EPA initiatives: the Resource Conservation Challenge (RCC) and the National Pollutant Discharge Elimination System (NPDES) stormwater regulations. EPA implemented the RCC to increase waste recycling and reuse in the United States. One key EPA goal that supports the RCC is increasing recycling of municipal solid waste (MSW) to 35 percent by 2008.

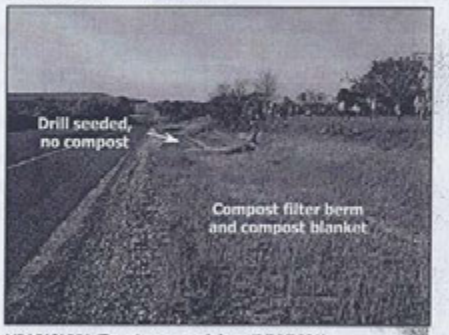
Recycling of organic materials, such as green yard waste and food waste, is an important component in reachir g this goal. As more commercial composters have entered the market to recycle MSW, EPA recognized the need to develop new markets for compost.

NPDES regulations require that municipal separate storm sewer systems (MS4s) control the quantity and quality of stormwater reaching nearby water bodies. Control of stormwater quality is particularly important at construction sites, where there is often a large disturbed area that can contribute sediment and other contaminants to stormwater.

Compost-based BMPs, such as **compost blankets, compost filter berms,** and **compost filter socks,** provide effective treatment of stormwater when used in construction and post-construction stormwater BMPs.



US HWY 281 (Texas) on 1/30/2001.



US HWY 281 (Texas) one month later (2/28/2001).
Source: Texas Commission on Environmental Quality (TCEQ)

Benefits of Compost-Based BMPS

- Compost retains a large volume of water, thus helping to prevent/reduce erosion, reduce runoff, and establish vegetation.
- Compost improves downstream water quality by retaining pollutants such as heavy metals, nitrogen, phosphorus, oil and grease, fuels, herbicides, and pesticides.
- Nutrients and hydrocarbons adsorbed and/or trapped by compost are decomposed by naturally occurring microorganisms.
- Compost improves soil structure and nutrient content, which reduces the need for chemical fertilizers.
- Compost-based BMPs remove as much or more sediment from stormwater as traditional perimeter controls, such as silt fences, while allowing a larger volume of clear water to pass through.

Brief descriptions of the compost-based BMPs are provided on the back of this page. For more information visit **http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm** to view the fact sheets for these construction BMPs.

Compost-Based Stormwater BMP Fact Sheets

EPA developed fact sheets for three compost-based BMPs, which are posted on EPA's Stormwater Phase II Menu of BMPs. Brief summaries of each BMP are presented below. The full fact sheets contain the following information for each BMP:

- BMP description
- Applicability
- Siting and design considerations
- Required compost quality
- Limitations
- Maintenance considerations
- Effectiveness
- Cost considerations
- References

Compost Blanket

Application of a compost blanket using a pneumatic blower. *Source: TCEQ*

A compost blanket is a layer of loosely applied compost that is placed on the soil in disturbed areas to control erosion and retain sediment resulting from sheet flow runoff. It is used in place of sediment and erosion control tools such as mulch, netting, or chemical stabilization.

- Use on any soil surface (e.g., road embankments and construction sites) on slopes between 4:1 and 1:1.
- For steeper slopes (1:1), use compost that is designed for this purpose and install in conjunction with netting or another confinement system.

Compost Filter Sock

A compost filter sock is a mesh tube filled with compost that is placed perpendicular to sheet flow runoff to control erosion and retain sediment in disturbed areas. The filter sock can be used in place of a sediment and erosion control tool such as a silt fence.

- Use along the perimeter of a site or at intervals along a slope to treat sheet flow runoff. In areas of concentrated flow, place sock in an inverted V going up the slope to reduce the velocity of runoff.
- Filter socks can be moved and are especially useful on steep or rocky slopes.
- No trenching is required during installation; therefore, socks can be used on pavement as inlet protection for storm drains.

Installation of filter socks in a road ditch; socks will be staked through the center. *Source: Filtrexx International, LLC*

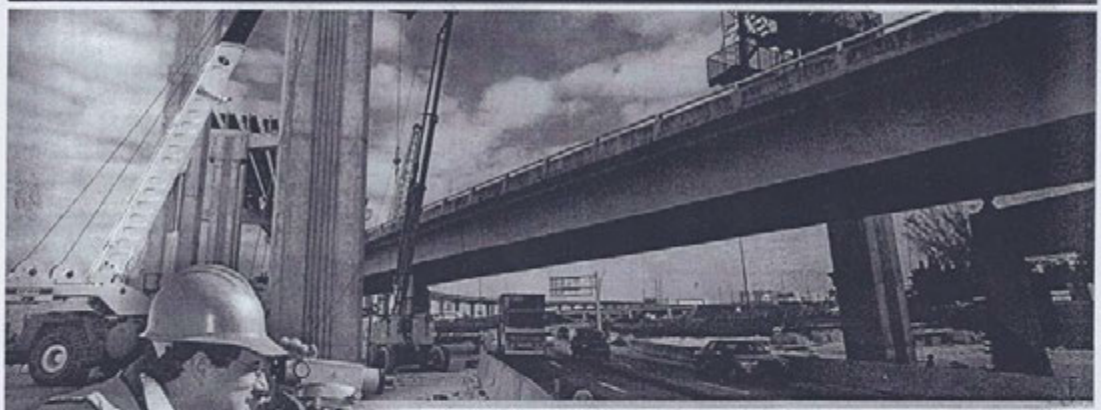
Compost Filter Berm

Vegetated compost filter berm; note clear water on downstream side of berm. *Source: TCEQ*

A compost filter berm is a dike of compost that is placed perpendicular to sheet flow runoff to control erosion in disturbed areas and retain sediment. It can be used in place of a sediment and erosion control tool such as a silt fence. The base of the berm is generally twice the height of the berm.

- Place along the perimeter of a site or at intervals along a slope to capture and treat runoff. Not suitable for areas with concentrated runoff, unless the drainage is small and the flow rate is low.
- No trenching is required for installation; therefore, berms can be installed on frozen or rocky ground.

Using Recycled Industrial Materials in Roadways



Greening the Nation's Infrastructure.

This fact sheet discusses the use of industrial materials in roadways and other infrastructure projects as an alternative to virgin materials and construction products. Industrial materials are the byproducts of industrial processes. Each year in the United States, industries produce over half a billion tons of potentially usable materials, such as coal combustion products (CCPs), construction and demolition (C&D) materials, spent foundry sands, used tires, and slags. Many have chemical and physical properties that make them valuable resources when recycled or beneficially reused, but they are often disposed of as waste. The U.S. Environmental Protection Agency (EPA) is committed to increasing the recycling of industrial materials as part of its ***Resource Conservation Challenge***, a national effort to save energy and reduce greenhouse gas emissions by managing materials more efficiently. Industrial materials recycling is helping to green the nation's infrastructure by making roadways more durable, conserving natural resources, decreasing energy use, and reducing greenhouse gas emissions.

www.epa.gov/industrialmaterials

An Overview:

Roadway Applications for Industrial Materials

Roadways are a central component of the nation's infrastructure and present a wide array of opportunities for using industrial materials. This diagram illustrates the most common roadway applications for industrial materials. Note that the availability of specific industrial materials can vary regionally, so visit the Web sites in the "Resources for More Information" section of this document for information on identifying suppliers of industrial materials in your region as well as local C&D materials recyclers.

Why Use Industrial Materials in Roadways?

Environmental Benefits

Since many industrial materials are used to replace non-renewable virgin materials that must be mined and processed, using industrial materials conserves natural resources and reduces the energy use and pollution associated with these activities. For example, substituting fly ash (a CCPI for portland cement in concrete saves the energy and greenhouse gas emissions associated with producing cement. Roads and other structures made with industrial materials can be more durable. Maintaining and replacing roads less frequently is good for the environment because it conserves natural resources and energy.

Economic Benefits

Using industrial materials makes good economic sense for project owners and contractors. If industrial material use is planned from the beginning, the total project bid cost can be lower, allowing the project owner to accomplish more work with the same budget. Industrial materials are often less expensive than the virgin materials they replace, and recycling or reusing materials onsite can reduce material hauling and disposal costs. Putting industrial materials such as fly ash to use in infrastructure projects also reduces the need for new or expanded landfills, saving valuable landfill capacity.

Performance Benefits

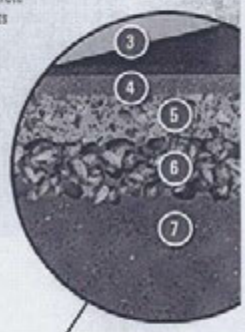
Industrial materials offer significant performance enhancement benefits. For example, steel slag, when used as an aggregate for asphalt roadway riding surfaces, has a high-friction surface that makes driving safer. Using fly ash as a partial replacement for portland cement in concrete enhances the durability and smoothness of the concrete. Rubber tires used as lightweight fill material offer outstanding long-term performance benefits and are less expensive than many alternatives. Asphalt pavement made with used tires is also more flexible, quieter, and less prone to cracking than standard asphalt pavement.

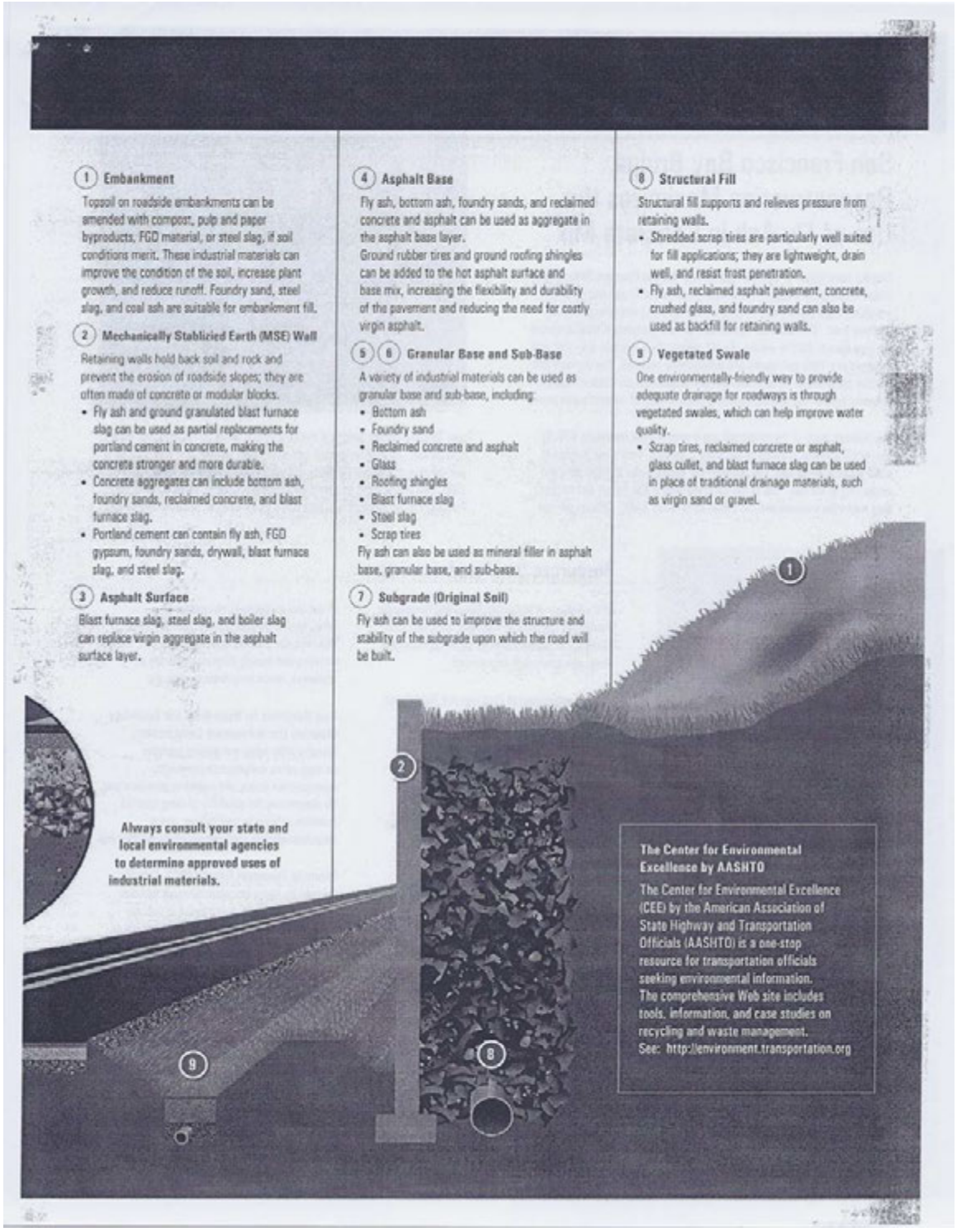
Green Design

Organizations are encouraging highway construction and renovation activities that have a reduced impact on the environment. The U.S. EPA, the Federal Highway Administration, and the Maryland State Highway Administration sponsor the Mid-Atlantic Green Highways Partnership (GHP). The GHP seeks to incorporate environmental streamlining and stewardship into all aspects of the highway development lifecycle, including using industrial materials. Visit www.greenhighways.org

Recycling Industrial Materials in Concrete Pavements.

This image portrays the use of industrial materials in hot-mix asphalt pavement (HMA); however, industrial materials have very similar applications in traditional portland cement concrete pavement (PCC). Both HMA and PCC pavements require aggregates, and the list of aggregates under the "Concrete Retaining Wall" and "Asphalt Base" applications can be used in both HMA and PCC roads. PCC roads can incorporate ground granulated blast furnace slag and reclaimed concrete aggregate (RCA) more easily and in larger volumes than HMA can. See the American Association of State Highway and Transportation Officials (AASHTO) provisional standard MP 16-07 for use of RCA in hydraulic cement concrete.





1 Embankment

Topsoil on roadside embankments can be amended with compost, pulp and paper byproducts, FGD material, or steel slag, if soil conditions merit. These industrial materials can improve the condition of the soil, increase plant growth, and reduce runoff. Foundry sand, steel slag, and coal ash are suitable for embankment fill.

2 Mechanically Stabilized Earth (MSE) Wall

Retaining walls hold back soil and rock and prevent the erosion of roadside slopes; they are often made of concrete or modular blocks.

- Fly ash and ground granulated blast furnace slag can be used as partial replacements for portland cement in concrete, making the concrete stronger and more durable.
- Concrete aggregates can include bottom ash, foundry sands, reclaimed concrete, and blast furnace slag.
- Portland cement can contain fly ash, FGD gypsum, foundry sands, drywall, blast furnace slag, and steel slag.

3 Asphalt Surface

Blast furnace slag, steel slag, and boiler slag can replace virgin aggregate in the asphalt surface layer.

4 Asphalt Base

Fly ash, bottom ash, foundry sands, and reclaimed concrete and asphalt can be used as aggregate in the asphalt base layer.

Ground rubber tires and ground roofing shingles can be added to the hot asphalt surface and base mix, increasing the flexibility and durability of the pavement and reducing the need for costly virgin asphalt.

5 6 Granular Base and Sub-Base

A variety of industrial materials can be used as granular base and sub-base, including:

- Bottom ash
- Foundry sand
- Reclaimed concrete and asphalt
- Glass
- Roofing shingles
- Blast furnace slag
- Steel slag
- Scrap tires

Fly ash can also be used as mineral filler in asphalt base, granular base, and sub-base.

7 Subgrade (Original Soil)

Fly ash can be used to improve the structure and stability of the subgrade upon which the road will be built.

8 Structural Fill

Structural fill supports and relieves pressure from retaining walls.

- Shredded scrap tires are particularly well suited for fill applications; they are lightweight, drain well, and resist frost penetration.
- Fly ash, reclaimed asphalt pavement, concrete, crushed glass, and foundry sand can also be used as backfill for retaining walls.

9 Vegetated Swale

One environmentally-friendly way to provide adequate drainage for roadways is through vegetated swales, which can help improve water quality.

- Scrap tires, reclaimed concrete or asphalt, glass cullet, and blast furnace slag can be used in place of traditional drainage materials, such as virgin sand or gravel.

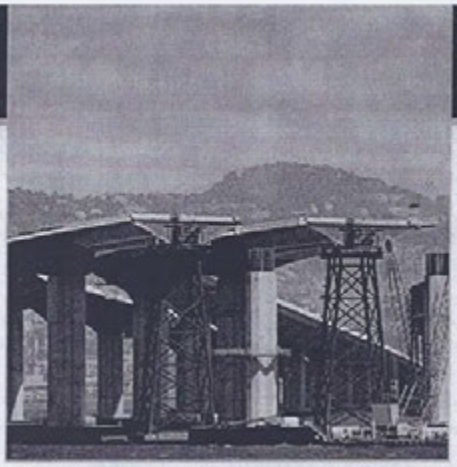
Always consult your state and local environmental agencies to determine approved uses of industrial materials.

The Center for Environmental Excellence by AASHTO

The Center for Environmental Excellence (CEE) by the American Association of State Highway and Transportation Officials (AASHTO) is a one-stop resource for transportation officials seeking environmental information. The comprehensive Web site includes tools, information, and case studies on recycling and waste management. See: http://environment.transportation.org

Case Study

San Francisco Bay Bridge Reconstruction Maximizes the Use of Fly Ash in Concrete Mix



Ongoing construction of the new east span of the San Francisco Oakland Bay Bridge is taking advantage of the unique properties of fly ash and ground granulated blast furnace slag to enhance the durability and strength of the concrete used. The California Department of Transportation (Caltrans) started the new span in 2002 to replace the old, seismically vulnerable span that was damaged in a 1989 earthquake and subsequently repaired. The chemical and physical properties of fly ash concrete help mitigate the corrosive effects of seawater and salt fog and the structural requirements of an earthquake zone.

The high-salt zones of the bridge will use a concrete mix containing 50% fly ash, which prevents cracking as the cement hardens, a common problem in a salt-water environment. The round fly ash particles also improve flow and workability in the mix. The fly ash concrete used is also denser and stronger than traditional concrete and can better carry heavy loads. Caltrans will use over 30 concrete mix designs in the new bridge, some containing more than 50% fly ash. In addition, ground granulated blast furnace slag was used in pier columns to improve durability and workability and reduce bleeding. In 2006, Caltrans received an award for Innovation from EPA's Coal Combustion Products Partnership (C^2P^2), in part based on its work on the new Bay Bridge.

Did You Know?

The American Association of State Highway Transportation Officials (AASHTO) has developed standards for using recycled industrial materials in cement and concrete. AASHTO M 295 and AASHTO M 302 are standard specifications for using fly ash and ground granulated blast furnace slag in cement and concrete in roadways. Contact your state or local environmental agency for more information about approved uses of industrial materials in your region. You can also contact your state Department of Transportation to determine whether they have developed specifications for using industrial materials in roadways. See the AASHTO Web site at: bookstore.transportation.org. See also the American Society for Testing Materials at: www.astm.org.

Environmental Protection Agency
EPA 530-F-08-024
www.epa.gov
July 2009

Resources for More Information

EPA's Industrial Materials Recycling Homepage: Provides an overview of industrial materials, their benefits, and opportunities for reuse and recycling: www.epa.gov/industrialmaterials

EPA's Comprehensive Procurement Guidelines: Includes information about construction and transportation products containing recycled content: www.epa.gov/cpg

Construction Industry Compliance Assistance (CICA) Center: Contains a C&D materials State Resource Locator, where you can find state environmental agency Web sites: www.cicacenter.org

The Federal Highway Administration (FHWA) Office of Pavement Technology's Recycling Web page: Provides information about current projects and activities, research and references, publications, and policies pertaining to the use of recycled materials: www.fhwa.dot.gov/pavement/recycling

The Recycled Materials Resource Center (RMRC): The RMRC's mission includes systematically testing, evaluating, developing appropriate guidelines for and demonstrating environmentally acceptable increased use of recycled materials in transportation infrastructure construction and maintenance. This Web site provides information on recycling and reusing industrial materials in roadways: www.recycledmaterials.org

User Guidelines for Byproducts and Secondary Materials Use in Pavement Construction: Provides information and general guidance on engineering evaluation requirements, environmental issues, and economic considerations for determining the suitability of using recycled materials in highway applications: www.recycledmaterials.org/tools/uguidelines/index.asp

Industrial Resources Council (IRC): Contains information about industrial materials and their applications. The IRC is composed of industry trade associations representing coal combustion products, foundry sands, iron and steel slag, wood and pulp materials, rubber materials, and construction and demolition materials: www.industrialresourcescouncil.org

Mid-Atlantic Green Highway Partnership: Seeks to incorporate environmental sustainability into all surface-transportation infrastructure, including using industrial materials: www.greenhighways.org

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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

December 18, 2009

Mr. Ronald E. Brummett
Executive Director
Kern Council of Governments
1401 19th Street, Suite 300
Bakersfield, C 93301

RE: Notice of Preparation – Subsequent Environmental Impact Report (SEIR) for the 2011 Regional Transportation Plan.

Dear Mr. Brummett,

The California High-Speed Rail Authority (Authority) received a copy of the Kern Council of Governments Notice of Preparation (NOP) for the Subsequent Environmental Impact Report (SEIR) for the 2011 Regional Transportation Plan. We appreciate the opportunity to provide you with our comments.

The Authority and Federal Railroad Administration (FRA) are currently planning the statewide California High-Speed Train (HST) System. The HST System is comprised of a dedicated system of fully grade separated, access-controlled steel tracks with state-of-the-art safety, signaling, communication, automated train control systems and train stations providing intercity travel.

The HST System will provide service between the major metropolitan centers of Sacramento and the San Francisco Bay Area in the north, through the Central Valley and the Tehachapi Mountains and to Los Angeles and San Diego in the south. The HST System would be about 800-miles long. Maps of the proposed HST system are attached.

In 2005, the Authority and the FRA completed a Statewide Program EIR/EIS as the first-phase of a tiered environmental review process for the proposed HST system. In the Statewide Program EIR/EIS, the Authority and the FRA selected the State Route 58/14 corridor between Palmdale and Bakersfield as the preferred alternative. In 2008, the Authority published the Bay Area-to-Central Valley HST Program EIR/EIS. As part of the HST Alternatives selected for further analysis, the Authority and FRA initially defined a corridor between Merced and Bakersfield.

The Authority and the FRA generally selected the Burlington Northern Santa Fe Railroad (BNSF) corridor for the high-speed train route from Fresno to Bakersfield, with stations in downtown Fresno and Bakersfield. Alternative alignments in Kern County are adjacent to the BNSF right-of-way and pass the cities of Corcoran, Wasco and Shafter and in to Bakersfield. The alignment continues through Bakersfield and east to the city of Tehachapi generally following the State Route 58/14 corridor, to the city of Palmdale.

925 L Street, Suite 1425 Sacramento, CA 95814 916.324.1541 fax 916.322.0827
www.cahighspeedrail.ca.gov

Mr. Ronald E. Brummett
December 18, 2009
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The Authority and the FRA are currently preparing Project Level Environmental Impact Reports/ Environmental Impact Statements (EIR/EIS) for the Fresno to Bakersfield HST section and the Palmdale to Bakersfield HST section. These documents will describe site-specific alignment alternatives, station locations and environmental impacts within these corridors.

Both the Fresno to Bakersfield and Palmdale to Bakersfield sections are within the jurisdiction of Kern COG. A general map of the HST alignments is attached. Since the HST will transverse through Kern County, the 2011 Regional Transportation Plan and the Subsequent Environmental Impact Report (SEIR) should include information and cumulative impacts of the proposed HST project. The Authority through its Program Management Team and Regional Consultants is available to assist Kern COG.

The Authority appreciates the cooperative relationship it currently maintains with Kern COG. Please contact me at (559) 221-2636 for any questions or assistance with your environmental analysis.

Yours truly,

Carrie L. Bowen

Ms. Carrie Bowen, Regional Director
California High-Speed Rail Authority
516 W. Shaw Avenue #200
Fresno, CA 93704-2515

Attachment

cc: Tom Tracy, PMT
Bob Schaevitz, URS

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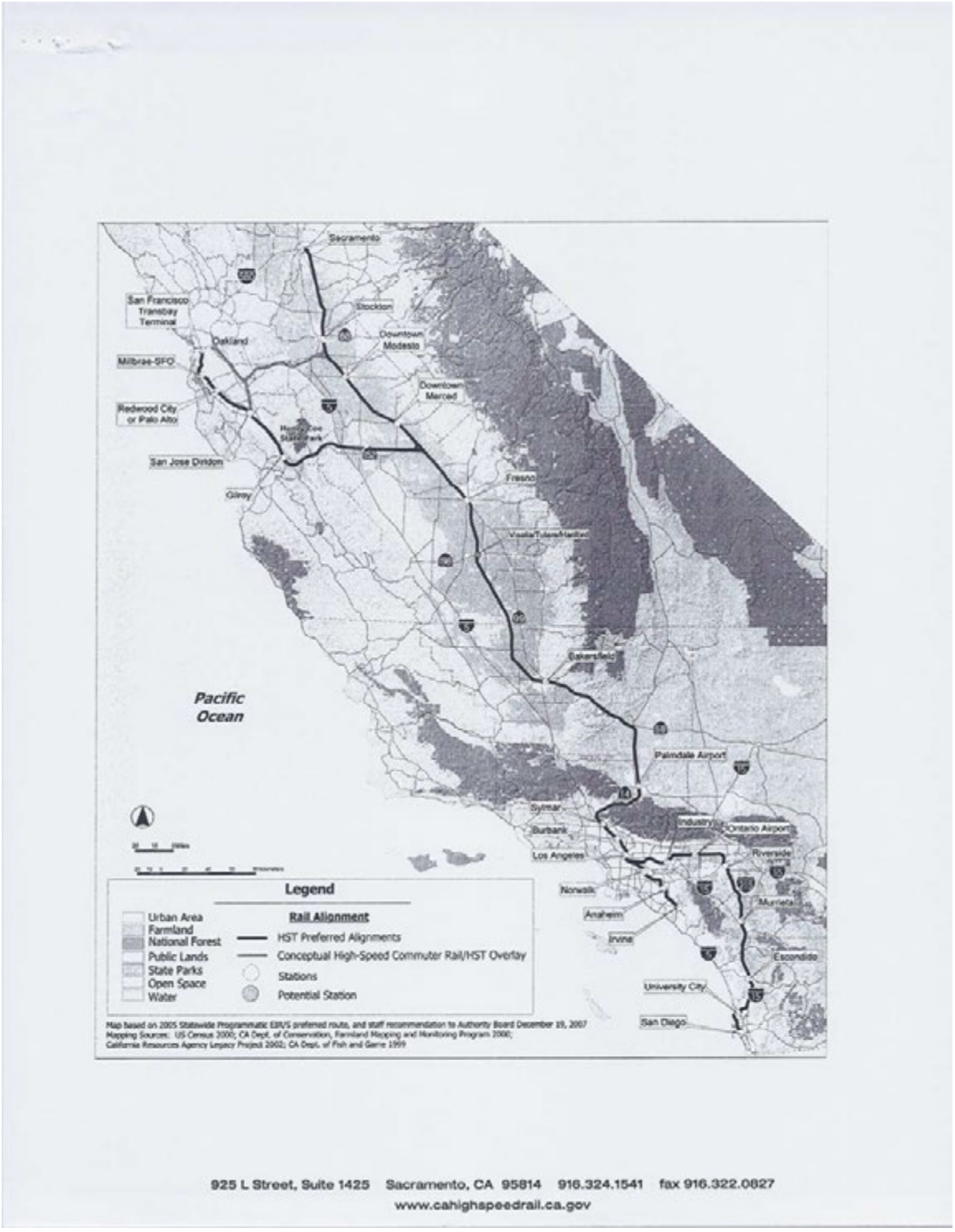

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APPENDIX C - STATEMENT OF OVERRIDING CONSIDERATIONS

SUMMARY OF SIGNIFICANT, ADVERSE, UNAVOIDABLE IMPACTS

Kern COG has prepared a mitigation monitoring program for the Kern COG 2011 Regional Transportation Plan Subsequent Environmental Impact Report (SEIR) as required by the California Environmental Quality Act (CEQA), Public Resources Code 21000 et seq. Kern COG identified several significant, adverse, and unavoidable impacts in the SEIR. As such, CEQA requires the Kern COG Board of Directors to balance the benefits of the Proposed Plan Option against its unavoidable environmental risks in determining whether to approve the Regional Transportation Plan. The SEIRs identify the following significant, adverse, and unavoidable environmental impacts:

- Impact 3.1.1: Construction and implementation of individual projects could potentially impede or block views of scenic resources as seen from the transportation facility or from the surrounding area.

- Impact 3.1.2: Construction and implementation of the projects could alter the appearance of scenic resources along or near designated scenic highways and vista points.

- Impact 3.1.4: Construction and implementation of individual projects could potentially create a new source of substantial light or glare that would affect day or nighttime views of scenic resources as seen from the transportation facility or from the surrounding area.

- Impact 3.1.5: Kern County will experience significant growth and development by 2035. The 2011 RTP influences the pattern of this development, by increasing mobility and including transportation measures. At the regional scale, the 2011 RTP's contribution to impacts on the overall visual character of the existing landscape setting would be cumulatively significant.

- Impact 3.2.1: Individual improvement projects in the Plan could have significant impacts on land use patterns, potentially causing land use growth and development to occur in areas not previously envisioned for growth and development. This impact could be especially significant on agricultural land uses within the County.

- Impact 3.3.3: The Project will result in beneficial effects of system-wide improvement in traffic flows and reduced congestion, which would reduce the potential for increased air emissions. While TCMs have been identified in the Air Quality Conformity Findings, the TCMs will not result in attainment of all pollutants over time or by the year 2035.

- Impact 3.4.1: The Project includes individual improvement projects that may result in direct removal or degradation of riparian habitat or other sensitive natural communities during construction activities such as grading and grubbing.

- Impact 3.4.2: The Project includes improvements that may result in direct impacts to plant and wildlife species including rare, threatened and/or endangered species during construction and operation of the proposed transportation facilities through the removal of native habitat.

- Impact 3.4.3: The Project includes improvements that may result in indirect impacts to plant and wildlife species including rare, threatened and/or endangered species during the construction and operation through edge effects such as noise, lighting and visual deterrents.

- Impact 3.4.4: The Project includes individual improvement projects that would result in temporary and permanent impacts to terrestrial and aquatic wildlife movement.

- Impact 3.4.6: The 2011 RTP would potentially increase siltation of streams and other water resources from exposures of erodible soils during construction activities.

- Impact 3.4.7: Growth and development in Kern County will increase substantially by 2035. The 2011 RTP, by increasing mobility and including transportation measures, influences the pattern of this growth and development.

- Impact 3.5.1: Increased Transportation GHG Emissions May Cause Climate Change

- Impact 3.6.1: Cultural resources may be encountered during development of projects proposed in the 2011 RTP. These resources may include, but are not limited to, prehistoric and historical archaeological sites, paleontological sites, historical buildings, and structures associated with agriculture, mining, and petroleum development. Properties important to Native American communities and other ethnic groups, including tangible properties possessing intangible traditional cultural values, also may be present. Such resources may exist individually, in groupings of modest size, or in districts covering substantial geographies.

- Impact 3.6.2: Construction activities may impact known paleontological resources.

- Impact 3.6.3: The 2011 RTP's influence on growth contributes to regional impacts to existing historic resources and previously undisturbed and undiscovered cultural resources, as described in Impacts 3.6.1 and 3.6.2 above.

- Impact 3.7.2: Some improvement projects require significant earthwork, increasing potential slope failure and long-term erosion. Earthwork can also alter unique geologic features. Project impacts would be considered significant in some cases.

- Impact 3.7.5: Although the scope of study performed for this EIR evaluation did not include a determination for project-specific liquefaction or seismic settlement potential, it is possible that liquefiable soils or soils susceptible to seismic compaction during ground shaking exist within areas of planned transportation improvement projects. This is a potentially significant impact, which will require analysis as part of subsequent project-specific environmental review.

- Impact 3.7.6: Some street and highway projects may be proposed along alignments that will affect State-owned and State mineral-reserved lands.

- Impact 3.7.7: Given the regional scale and growth-inducing nature of the projects and programs included in the 2011 RTP, the cumulative impacts of the 2011 RTP on geological units and soils as well as the potential exposure to substantial adverse effects to people and property would be significant.

- Impact 3.8.2: The implementation of the 2011 RTP could create a hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment during transportation. Implementation of the 2011 RTP would facilitate the movement of goods, including hazardous materials, through the region. Transportation of goods, in general, and hazardous materials in particular, can thus be expected to increase substantially with implementation of the 2011 RTP.

- Impact 3.9.5: The 2011 RTP, by increasing mobility and by including transportation measures, influences the pattern of this development. The 2011 RTP's influence on growth would contribute to the conversion of undeveloped land, resulting in impacts to water quality, stormwater infiltration and groundwater recharge, flood hazard impacts, and wastewater treatment services, and water demand.

- Impact 3.10.1: While the RTP is likely to result in a positive outcome related to supportive land use conditions for alternative forms of transportation such as transit, other projects in the RTP could have significant impacts on land use patterns, potentially causing land use growth and development to occur in areas not previously envisioned for growth and development. This impact could be especially significant on agricultural land uses within the County.

- Impact 3.10.2: Sensitive receptors could be impacted because of the proposed individual improvement projects. These possible impacts would depend on several factors such as the type of individual improvement project proposed for the area, projected land use designation of the area, and duration of proposed construction activities. For the most part, improvement projects involving new systems would pose the greatest potential impacts to sensitive receptors. Specifically, sensitive receptors located in the vicinities of such improvement projects could be significantly impacted by the construction and operation of the proposed projects. Additionally, modification projects would result in short-term construction and long-term impacts to sensitive receptors.

- Impact 3.10.3: Construction and implementation of projects would result in the loss of open space and community recreation areas. This would be considered a potentially significant impact. Pockets of open space vary in size and location throughout the County and within the cities. Open space land uses include agricultural areas, public parks, recreational facilities, and areas planned for such uses.

- Impact 3.10.4: Implementation of the projects and programs contained in the 2011 RTP could potentially result in the disturbance or loss of significant agricultural resources throughout the Kern region. This would be considered a potentially significant impact. The County contains areas designated by the state as Prime Farmland, Unique Farmland, and Farmland of Statewide Importance. These areas are interspersed throughout urban areas or are located in undeveloped portions of the region. Development of highway, arterial and transit projects proposed under the RTP could potentially result in the disturbance or loss of some of these designated areas. Specifically, new projects involving construction would be most likely to result in impacts to these areas.

- Impact 3.10.6: Growth and development in the County will increase substantially by 2035. The 2011 RTP, by increasing mobility and including transportation measures, influences the pattern of this development. The 2011 RTP's influence on growth contributes to regional cumulatively considerable impacts to land use and would change the intensity of land use in some areas.

- Impact 3.11.1: Grading and construction activities associated with the proposed highway, arterial, and transit projects would intermittently and temporarily generate noise levels above ambient background levels. Noise levels in the immediate vicinity of the construction sites would increase substantially sometimes for extended durations. This would be considered a potentially significant impact.

- Impact 3.12.1: The individual improvement projects could affect overall population, housing and employment growth and dispersion in the region from the predicted regional assumptions. Implementation of the proposed mitigation measures is expected to reduce this to a less-than-significant impact. The individual improvement projects are a specific set of transportation improvements together with the long-range transportation plan developed to meet, among other goals,

the long-term socio-economic conditions of the region. One of the strategic issues is growth. Between the years, 2005 and 2030, residential population is expected to increase by 58 percent. The recent growth trends in housing, population, and jobs within the region are expected to continue.

- Impact 3.12.2: Noise-sensitive land uses could be exposed to noise in excess of normally acceptable noise levels and/or could experience substantial increases in noise as a result of the operation of expanded or new transportation facilities (i.e., increased traffic resulting from new highways, addition of highway lanes, roadways, ramps, and new transit facilities as well as increased use of existing transit facilities, etc.).

- Impact 3.12.3: Cumulative ambient noise levels could increase in the region to exceed normally acceptable noise levels or have substantial increases in noise as a result of the operation of expanded or new transportation facilities (i.e., increased traffic resulting from new highways, addition of highway lanes, roadways, ramps, and new use of new transit facilities as well as increased use of existing transit facilities, etc.).

- Impact 3.13.1: The Project could affect overall population, housing and employment growth and dispersion in the region from the predicted regional assumptions. Implementation of the proposed mitigation measures is expected to reduce this to a less than significant impact. The Project is a specific set of transportation improvements together with the long-range transportation plan developed to meet, among other goals, the long-term socio-economic conditions of the region. One of the strategic issues is growth. Between the years, 2010 and 2035, residential population is expected to increase by 56 percent. The recent growth trends in housing, population, and jobs within the region are expected to continue.

- Impact 3.12.2: The Project has the potential to disrupt or divide a community by separating community facilities, restricting community access and eliminating community amenities.

- Impact 3.12.3: Growth and development in the County will increase substantially by 2035. The 2011 RTP, by increasing mobility and including transportation measures, influences the pattern of this development. The 2011 RTP's influence on growth contributes to regional cumulatively considerable impacts to population, housing and employment and would change the intensity of land use in some areas.

- Impact 3.13.5: Growth and development in the County will increase substantially by 2035. The 2011 RTP, by increasing mobility and including transportation measures, influences the pattern of this development. The 2011 RTP's influence on growth contributes to regional cumulatively considerable impacts to police and fire and emergency services, solid waste services, and other public services in the County.

- Impact 3.14.1: The list of deficient facilities along the Regionally Significant Roads System with and without the Project indicates that when the individual improvement project improvements are made to the regionally significant street and highway system, LOS conditions within the Kern region will significantly improve. Capacity increasing projects that would improve these deficient levels of service are not included in the Project; however even with mitigation, the 2035 levels of service would still include a number of segments that will operate at deficient levels or at LOS E and F.

OVERRIDING CONSIDERATIONS

Kern COG is required to prepare this Statement of Overriding Considerations to explain the reasons for approving the 2011 RTP, despite the unavoidable impacts identified in the SEIR and Findings of Fact (as per Section 15093 of the State CEQA Guidelines). In preparing this Statement, Kern COG has balanced the benefits of the Proposed Plan Option against its unavoidable environmental risks. Kern COG finds that the unavoidable significant adverse effects of the individual improvement projects are overridden by the benefits of those projects and the considerations described below. Kern COG, therefore, makes and adopts the following Overriding Considerations:

- The requirement for updates to the RTP every four (4) years, which provides for the identification of transportation modes to address population and employment growth, is required by State Law and sound local planning practice, and is an overriding concern.

- The specific need to provide necessary, feasible and sustainable transportation system improvements within the region is an overriding concern.

- The need to provide choice in the availability of transportation modes for County residents as a means to avoid significant delay and congestion, which may indirectly harm businesses and residents that depend upon a viable transportation system, is an overriding concern.

- Because there is no alternative other than the "No Build", "No Project" (2011 Regional Transportation Plan), and VMT Reduction Alternatives to converting some prime farmland for expansion of the circulation system, the need for such conversion is an overriding concern.

- While the individual improvement projects will not result in emissions beyond those allowed through the conformity process, and construction and hot spot emission impacts can be mitigated or are not found to be significant, the fact that the Valley continues to be nonattainment for volatile organic compounds, nitrogen oxides, and PM emissions, is an overriding concern.

- Because there is no alternative other than "No Build", "No Project", and VMT Reduction Alternatives to the loss of some biological resources for expansion of the circulation system, the loss of such resources is an overriding concern.

- The 2011 RTP balances the need to preserve valuable agricultural and biological resources with the region's need to provide a viable transportation system to accommodate anticipated population and employment growth and the related increased need for employment opportunities and municipal revenue. This planning balance is an overriding concern.

- Regional benefits associated with implementation of the 2011 RTP (reduced vehicular emissions, reduced congestion, reduced travel time, reduced vehicle miles traveled and improved mobility), will result from the implementation of planned improvement projects, which outweigh the potentially unavoidable localized impacts to land use development that may result from the individual improvement projects.

- Implementation of the 2011 RTP will result in increased unavoidable noise levels as a result of expansion of the planned transportation system, but the specific need to provide necessary, feasible and sustainable transportation system improvements within the region that supports planned growth and development, is an overriding concern.

- Implementation of the 2011 RTP would result in positive impacts on public services; however, long-term maintenance of various transportation modes including streets and highways is an overriding concern.

- Regional and localized benefits associated with implementation of the 2011 RTP (reduced vehicular emissions, reduced congestion, reduced travel time, reduced vehicle miles traveled and improved mobility), that will result from the implementation of planned improvement projects, outweigh the potentially unavoidable impacts associated with individual or localized improvement projects and other projects identified in the Project alternatives. These other alternatives will result in a greater number of Level of Service (LOS) deficiencies and infeasible transportation projects that will not result in further benefits beyond implementation of the 2011 RTP.

Based on substantial evidence in the public record, Kern COG finds that, for the reasons set forth above, the economic, social and other consideration of the individual improvement projects outweigh the unavoidable agricultural, biological, land use/planning, noise, and transportation/circulation impacts identified in the SEIR. First, the individual improvement projects identified in the 2011 RTP are required to meet travel demand of residents and businesses through to the year 2035. Second, the planned transportation improvements will enhance continued economic growth in the region. Third, the planned improvements will reduce levels of vehicular emissions and LOS deficiencies compared to the other project alternatives. Fourth, appropriate and achievable mitigation measures have been proposed, which are within Kern COG's and its member agencies' jurisdiction to mitigate or avoid the significant environmental effects identified in the SEIR.

APPENDIX D - MITIGATION MONITORING PROGRAM

STATUTORY REQUIREMENT

This Mitigation Monitoring Program for the Kern COG 2011 Regional Transportation Plan Subsequent Environmental Impact Report (SEIR) has been developed in accordance with Section 21081.6 of the Public Resources Code, which requires a Lead Agency that approves or carries out a project, where an EIR has identified significant environmental effects, to adopt a reporting or monitoring program. The purpose of this program is to identify the changes to the project, which the Lead Agency has adopted or made a condition of a project approval in order to mitigate or avoid significant effects on the environment. The Kern Council of Governments (Kern COG) is the Lead Agency that must adopt the mitigation monitoring program for the Kern COG 2011 Regional Transportation Plan if the Project is approved.

Section 21069 of the CEQA statutes defines Responsible Agency as a public agency, other than the Lead Agency, which has the responsibility for carrying out or approving a project. Kern COG finds that the implementation of some mitigation measures listed on the following pages of this Final SEIR are not within its jurisdiction, and can and should be implemented and monitored by agencies responsible for implementing individual improvement projects, including but not limited to the following: cities, Counties, Caltrans, transit districts, and other responsible agencies.

CEQA statutes and Guidelines provide direction for clarifying and managing the complex relationships between a Lead Agency (Kern COG) and other agencies with respect to implementing and monitoring mitigation measures. In accordance with CEQA Guidelines Section 15097.d, "each agency has the discretion to choose its own approach to monitoring or reporting; and each agency has its own special expertise." This discretion will be exercised by implementing agencies at the time they undertake any of the individual improvement projects identified in the Draft and Final SEIRs.

Regular review and update of the 2011 Regional Transportation Plan will be conducted by Kern COG, as appropriate. These updates involve a determination of regional transportation and air quality impacts and will require air quality conformity pursuant to the federal Clean Air Act.

ADMINISTRATION OF THE MITIGATION MONITORING PROGRAM

Mitigation measures listed in this Mitigation Monitoring Program will be implemented by one or more responsible or implementing agencies when those agencies undertake individual transportation improvement projects identified in the Regional Transportation Plan.

The Mitigation Monitoring Program consists of the following components:

- Mitigation measures contained in the SEIR;
- Identification of Responsible Party;
- Description of mitigation measure timing; and
- Identification of monitoring agency.

This Mitigation Monitoring Program shall be maintained in the Kern COG's files for the Kern COG 2011 Regional Transportation Plan.

MITIGATION MEASURES

Aesthetics

3.1 Mitigation

1. All mitigation measures will be included in individual improvement project-level analysis, as appropriate. The implementation agency or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with mitigation measures.

    - Implement design guidelines, local policies, and programs aimed at protecting views of scenic corridors and avoiding visual intrusions; and

    - To the extent feasible, noise barriers that will not degrade or obstruct a scenic view will be constructed. Noise barriers will be well landscaped, complement the natural landscape and be graffiti-resistant.

2. All mitigation measures will be included in individual improvement project-level analysis, as appropriate. The implementation agency or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with mitigation measures.

    - Avoid construction of transportation facilities in state and locally designated scenic highways and vista points; and

    - If transportation facilities are constructed in state and locally designated scenic highways and/or vista points, design, construction, and operation of the transportation facility will be consistent with applicable guidelines and regulations for the preservation of scenic resources along the designated scenic highway.

3. All mitigation measures will be included in individual improvement project-level analysis, as appropriate. The implementation agency or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with mitigation measures.

    - Develop design guidelines for each type of transportation facility that make elements of proposed facilities visually compatible with surrounding areas. Visual guidelines will, at a minimum, include setback buffers, landscaping, color, texture, signage, and lighting criteria. The following methods will be employed whenever possible:

        - Transportation systems will be designed in a manner where the surrounding landscape dominates;
        - Transportation systems will be developed to be compatible with the surrounding environment (i.e., colors and materials of construction material);
        - If exotic vegetation is used, it will be used as screening and landscaping that blends in and complements the natural landscape;
        - Trees bordering highways will remain or be replaced so that clear cutting is not evident; and
        - Grading will blend with the adjacent landforms and topography.

- Project implementation agencies shall design projects to minimize contrasts in scale and massing between the project and surrounding natural forms and development. Project implementation agencies shall design projects to minimize their intrusion into important viewsheds and use contour grading to better match surrounding terrain. To the maximum extent feasible, landscaping along highway corridors shall be designed to add significant natural elements and visual interest to soften the hard-edged, linear travel experience that would otherwise occur.

- Project implementation agencies shall use natural landscaping to minimize contrasts between the project and surrounding areas. Wherever possible, interchanges and transit lines shall be designed at the grade of the surrounding land to limit view blockage. Edges of major cut-and-fill slopes should be contoured to provide a more natural looking finished profile. Project implementation agencies shall replace and renew landscaping to the greatest extent possible along corridors with road widenings, interchange projects, and related improvements. New corridor landscaping shall be designed to respect existing natural and man-made features and to complement the dominant landscaping of surrounding areas.

- Project implementation agencies shall construct sound walls of materials whose color and texture complements the surrounding landscape and development and to the maximum extent feasible, use color, texture, and alternating facades to "break up" large facades and provide visual interest. Where there is room, project sponsors shall landscape the sound walls with plants that screen the sound wall, preferably with either native vegetation or landscaping that complements the dominant landscaping of surrounding areas.

4. All mitigation measures will be included in project-level analysis, as appropriate. The implementation agency or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with mitigation measures.

5. Cumulative Measures

- Mitigation measures identified above should also be implemented as applicable to development projects throughout the region.

- In visually sensitive site areas and prior to project approval, local land use agencies shall apply development standards and guidelines to maintain compatibility with surrounding natural areas, including site coverage, building height and massing, building materials and color, landscaping, site grading, etc.

- Local agencies should develop design guidelines for each type of transportation facility that make light elements of proposed facilities visually compatible with surrounding areas. The following methods will be employed whenever possible:
  - Transportation systems will be designed in a manner where the surrounding landscape dominates;
  - Transportation systems will be developed to be compatible with the surrounding environment; and
  - Lighting devices will be employed such as downward facing light, light shields, and amber lumens.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies. (Caltrans and local agencies).

When Mitigation Measures are to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

Agricultural Resources

3.2 Mitigation

1. The impact on significant agricultural resources will be evaluated as part of the appropriate improvement project-specific environmental review. Mitigation measures will be identified to minimize impacts. Implementation agencies will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with all mitigation measures.

    - Individual projects will be consistent with local land use plans and policies that designate areas for urban land use and preserve agricultural lands that support the economic viability of agricultural activities; and

    - Prior to final approval of each individual improvement project, the implementing agency will conduct the appropriate project-specific environmental review, including consideration of potential land use impacts.

2. The impact on significant agricultural resources will be evaluated as part of the appropriate project-specific environmental review. Mitigation measures will be identified to minimize impacts. Implementation agencies will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with all mitigation measures.

    - Individual projects will be consistent with federal, state, and local policies that preserve agricultural lands and support the economic viability of agricultural activities, as well as policies that provide compensation for property owners if preservation is not feasible;

    - For projects in agricultural areas, implementation agencies will contact the California Department of Conservation and the Agricultural Commissioner's office to identify the location of prime farmlands and lands that support crops considered valuable to the local or regional economy;

    - Prior to final approval of each individual improvement project, the implementing agency will establish conservation easement programs to mitigate impacts to prime farmland;

    - Prior to final approval of each individual improvement project, the implementing agency will avoid impacts to prime farmlands or farmlands that support crops considered valuable to the local or regional economy; and

    - Prior to final approval of each individual improvement project, the implementing agency will encourage enrollments of agricultural lands for counties that have Williamson Act programs.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies. (Caltrans and local agencies).

When Mitigation Measures are to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

Air Quality

3.3 Mitigation

1. All mitigation measures will be included in project-level analysis, as appropriate. The individual improvement project proponent or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with mitigation measures.

    - Implementation agencies will ensure implementation of mitigation measures to reduce PM_{10}, $PM_{2.5}$, and NOx emissions from construction sites, including:

        - Maintain on-site truck loading zones;
        - Configure on-site construction parking to minimize traffic interference and to ensure emergency vehicle access;
        - Provide temporary traffic control during all phases of construction activities to improve traffic flow;
        - Use best efforts to minimize truck idling to not more than two minutes during construction;
        - Apply non-toxic soil stabilizers (according to manufacturers' specifications) to all inactive construction areas;
        - During construction, replace ground cover in disturbed areas as quickly as possible;
        - During construction, enclose, cover, water twice daily or apply non-toxic soil binders (according to manufacturers' specifications) to exposed piles with five percent (5%) or greater silt content and to all unpaved parking or staging areas or unpaved road surfaces;
        - During the period of construction, install wheel washers where vehicles enter and exit unpaved roads onto paved roads, or wash off trucks and any equipment leaving the site each trip;
        - During the period of construction, assure that traffic speeds on all unpaved roads be reduced to fifteen (15) mph or less;
        - Pave all construction access roads at least 100 feet on to the site from permanent roadways; and
        - Cover all haul trucks.

    - Implementation agencies will avoid improvement project designs requiring significant amounts of material, such as excavated soil and construction debris, to be transported from the site to disposal facilities. Construction sites will employ a balanced cut/fill ratio to the extent possible, thus reducing haul-truck trip emissions.

2. At those facilities or intersections near sensitive receptors where carbon monoxide concentrations may exist, the implementing agency will reduce or alleviate these concentrations by improving traffic flows through improved signalization, restriping, addition of traffic lanes, and other improvements identified as part of the environmental review of an individual improvement project.

3. The various TCMs that have been incorporated into the Air District AQAP, ROP Plans, and the SJVAPCD TCM Program, or have been identified as necessary to provide for positive air quality conformity findings, as referenced in the latest Air Quality Conformity Findings for the 2011 RTP and other plans and programs.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies. (Caltrans and local agencies).

When Mitigation Measures are to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

Biotic Resources

3.4 Mitigation

1. All mitigation measures will be included in subsequent individual improvement project-level environmental analysis as appropriate. The individual improvement project proponent or local jurisdiction will be responsible for compliance with the mitigation measures during all phases of construction as appropriate. Kern COG will be provided with documentation of compliance with mitigation measures.

    - Construction and operational Best Management Practices (BMPs) will be identified, installed and maintained in order to prevent silt and other pollutants from entering jurisdictional waters and wetlands thereby degrading or destroying wildlife and/or natural habitat. BMPs may include straw bales and/or mats, temporary sedimentation basins, silt fence, sand bag check dams, dry season construction, etc;

    - Native soils in construction areas will be removed, stockpiled separately, and replaced in those areas where onsite revegetation of the native habitat is planned;

    - Any disturbed natural areas will be replanted with appropriate native vegetation following the completion of construction activities;

    - During the individual improvement project design phase, impacts to jurisdictional waters and wetlands will be minimized to the greatest extent feasible and

    - Individual improvement project proponents will obtain and comply with appropriate regulatory requirements prior to construction.

2. All mitigation measures will be included in subsequent individual improvement project-level environmental analysis as appropriate. The individual improvement project proponent or local jurisdiction will be responsible for compliance with the mitigation measures during all phases of construction as appropriate. Kern COG will be provided with documentation of compliance with mitigation measures.

   - Each proposed individual improvement project will consider the displacement of sensitive habitat, sensitive species, and non-native habitat during the individual improvement project design phase.

   - When avoidance of native vegetation removal is not possible, each transportation project shall replant disturbed areas with commensurate native vegetation of high habitat value adjacent to the project (i.e. as opposed to ornamental vegetation with relatively less habitat value).

   - Focused sensitive plant and wildlife species and non-native habitat surveys will be conducted within suitable habitat to determine the distribution of sensitive species within the biological impact area of the proposed transportation improvement project. Sensitive plant and non-native habitat surveys will be conducted during the appropriate flowering season for sensitive plant species with the potential to occur within the individual improvement project area. In all cases, impacts on special status species and/or their habitat shall be avoided during construction to the extent feasible.

   - If sensitive plant or wildlife species and non-native habitat are identified within the biological impact area, a Biological Resource Management Plan (BRMP) will be developed to address appropriate avoidance and minimization measures. These measures may include seed collection and salvage measures for sensitive plant species and non-native habitat, silt fencing, exclusion fencing and/or appropriate compensation where impacts cannot be fully avoided.

   - Individual transportation projects shall include offsite habitat enhancement or restoration to compensate for unavoidable habitat losses from the project site.

   - Locations of sensitive species, sensitive habitat, and non-native habitat will be mapped and shown on construction drawings and identified as Environmentally Sensitive Areas (ESAs). Prior to construction, these areas will be flagged and/or fenced to prevent unnecessary impacts from machinery and foot traffic.

   - Temporary access roads and staging areas will not be located within areas containing sensitive plant, sensitive wildlife species or non-native habitat wherever feasible, so as to avoid or minimize impacts to these species.

   - Construction activities will be scheduled, as appropriate and feasible, to avoid sensitive times that have a greater likelihood to affect significant resources such as spawning periods for fish, nesting season for birds and/or the rainy season for riparian habitat and sediment/erosion control.

   - All vegetation (including tall grasses) will be removed between August 16 and February 14, if possible, to avoid potential conflicts with nesting birds. If it is not possible to remove vegetation during that time frame, a nest clearance survey will be completed prior to vegetation clearing. Any detected nests will be mapped and provided with an appropriate buffer as recommended by a qualified biologist. Construction activities within the buffer area will not be allowed until after September 15 or until fledglings have abandoned the nest.

- A Worker Awareness Program (environmental education) shall be developed and implemented to inform project workers of their responsibilities in regards to avoiding and minimizing impacts on sensitive biological resources.

- An Environmental Inspector shall be appointed to serve as a contact for issues that may arise concerning implementation of mitigation measures, and to document and report on adherence to these measures.

- A qualified wetland scientist shall review construction drawings as part of each project-specific environmental analysis to determine whether wetlands will be impacted, and if necessary perform a formal wetland delineation. Appropriate state and federal permits shall be obtained, but each project EIR will contain language clearly stating the provisions of such permits, including avoidance measures, restoration procedures, and in the case of permanent impacts compensatory creation or enhancement measures to ensure a no net loss of wetland extent or function and values.

- Sensitive habitats (native vegetative communities identified as rare and/or sensitive by the CDFG) and special-status plant species (including vernal pools) impacted by projects shall be restored and augmented, if impacts are temporary, at a 1.1:1 ratio (compensation acres to impacted acres). Permanent impacts shall be compensated for by creating or restoring habitats at a 3:1 ratio as close as possible to the site of the impact.

- When work is conducted in identified sensitive habitat areas and/or areas of intact native vegetation, construction protocols shall require the salvage of perennial plants and the salvage and stockpile of topsoil (the surface material from 6 to 12 inches deep) and shall be used in restoring native vegetation to all areas of temporary disturbance within the project area.

- If specific project area trees are designated as “Landmark Trees” or “Heritage Trees”, then approval for removals shall be obtained through the appropriate entity, and appropriate mitigation measures shall be developed at that time, to ensure that the trees are replaced. Due to the close proximity of these areas to sensitive wildlife habitats, all mitigation trees will use only locally-collected native species.

- Use resource data to inform transportation decision-making.

- Use watershed, conservation, and recovery plans to identify important environmental considerations for the Kern COG region, such as critical wildlife corridors, the most important areas to protect for sensitive species, and areas with a high concentration of resources.

- Give conservation plans as much weight as General Plans when planning transportation investments.

- Incorporate concepts such as 100 to 200 foot buffers for stream corridors, and identification and improvement of priority culverts that currently restrict wildlife corridors and natural processes of stream and river systems.

- Use parcel maps to identify larger, undivided parcels for ease of acquisition and preservation, and designate areas as potential future mitigation sites.

- Consider the resource, “Eco-logical: An Ecosystem Approach to Developing Infrastructure Projects” (2006) which encourages Federal, State, Tribal and Local partners involved in the infrastructure planning, design, review, and construction to use flexibility in regulatory processes.

- Identify financial mechanisms to fund mitigation, such as development fees, sales tax, or the use of funds from alternative methods to identify and protect critical resource areas.

- Establish conservation easements that connect to and expand existing conservation areas.

- Describe locally-developed measures such as designated open space, measures requiring development set-backs near streams, etc.

- The following list of data resources should be referenced during development of biotic plans and studies for transportation improvement projects:

  - U.S. Fish & Wildlife Service species recovery plans;
  - USDA Natural Resources Conservation Service wetland data;
  - Nature Conservancy data and regional planning documents;
  - California Department of Fish and Game Natural Diversity Database; and
  - Local non-profit and land trust group information.

3. All mitigation measures will be included in subsequent individual improvement project-level environmental analysis as appropriate. The individual improvement project proponent or local jurisdiction will be responsible for compliance with the mitigation measures during all phases of construction as appropriate. Kern COG will be provided with documentation of compliance with mitigation measures.

   The height, spacing, number and type of light fixtures will be selected and installed to minimize intrusive light escaping from the physical boundaries of the site.

   - Road noise minimization methods such as native brush and tree planting adjacent to heavy noise producing transportation facilities or will be incorporated where feasible.

4. All mitigation measures will be included in subsequent individual improvement project-level environmental analysis as appropriate. The individual improvement project proponent or local jurisdiction will be responsible for compliance with the mitigation measures during all phases of construction as appropriate. Kern COG will be provided with documentation of compliance with mitigation measures.

   - During final design, implementing agencies, will design, construct, and maintain terrestrial wildlife crossings in order to minimize barrier effects and habitat fragmentation created by the transportation improvement project.

   - During final design, implementing agencies, will design, construct, and maintain any structure/culvert placed within a stream where endangered or threatened fish occur/may occur. The structure/culvert will not constitute a barrier to upstream or downstream movement of aquatic life, or cause an avoidance reaction by fish that impedes their upstream or downstream movement. This includes, but is not limited to, the supply of water at an appropriate depth for fish migration.

5. All mitigation measures will be included in subsequent individual improvement project-level environmental analysis as appropriate. The individual improvement project proponent or local jurisdiction will be responsible for compliance with the mitigation measures during all phases of construction as appropriate. Kern COG will be provided with documentation of compliance with mitigation measures.

- Construction and operation of the proposed transportation individual improvement project will comply with the requirements of all adopted HCPs and other preserved areas.

6. Siltation Measures:

   - Individual projects near water resources shall implement Best Management Practices (BMPs) at construction sites to minimize erosion and sediment transport from the area. BMPs include encouraging growth of vegetation in disturbed areas, using straw bales or other silt-catching devices, and using settling basins to minimize soil transport.

   - Individual projects shall schedule construction activities to avoid sensitive times for biological resources (e.g. steelhead spawning periods during the winter and spring) and to avoid the rainy season when erosion and sediment transport is increased.

7. The cumulative impacts to biological resources, due to the forecast urban development associated with the 2011 RTP, would be mitigated using the same measures detailed for Impacts 3.4.1 through 3.4.6, in addition to the following measure:

   - Future impacts to biotic resources shall be minimized through cooperation and information sharing between the implementation agency and affected resource agencies.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies. (Caltrans and local agencies).

When Mitigation Measures are to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

Climate Change

3.5 Mitigation

1, 2 The ultimate sources of increased transportation emissions in Kern County are population and employment growth, which will increase with or without projects referenced in the 2011 RTP. Kern COG does not implement land use policy in Kern County; rather, this is under the jurisdiction of the County and the various cities. Decisions about the place, pace, and scale of growth and development are reflected in the general plans and project approvals adopted by the local agencies. The 2011 RTP is designed to complement, rather than change, the plans adopted by the local agencies. Thus, the ultimate effect of the 2011 RTP on transportation emissions is not to increase the amount of travel per se, but rather to influence where and how travel occurs within and through the County.

As of the writing of this Draft Subsequent EIR, the agencies with jurisdiction over air quality regulation and GHG emissions (CARB and the San Joaquin Valley Air Pollution Control District) have not established regulations, guidance, methodologies, significance thresholds, standards, CEQA protocols or mitigation measures that specify the type of analysis, or mitigation measures, that can be included in a program EIR, or other CEQA document. In addition, no emission inventories or emission baselines have been established that would allow for an appropriate analysis to evaluate an existing setting and impact analysis for the proposed implementation of the Kern County RTP because of climate change. Kern COG adheres to the rules and guidelines currently in place at the local, State and federal level, and will adhere to any future regulations regarding global warming resulting from the legislative approval of AB 32 and AB 1493, when available.

A number of mitigation measures are included in Section 3.3 of the Draft EIR to address criteria emissions. Public transit has been enhanced in the 2011 RTP compared to the current RTP (adopted in 2007). Such improvements will help mitigate expected increases in emissions resulting from increased population and employment and the impact of planned growth and development on the regional transportation system. The RTP also includes references to a number of studies. The Plan contains a number of projects and significant funding for various forms of transportation in addition to streets and highways. Kern COG is in the process of developing a Regional Blueprint for the year 2050. Kern COG is coordinating development of the Blueprint with the other seven counties within the San Joaquin Valley. All eight counties are located in the same Air Basin (San Joaquin Valley Air Basin) and received the grant for Blueprint development from the State of California. The Blueprint programs in California are designed to address the three "E"s of Regional Blueprint Planning; that is, Energy Efficiency, the Environment, and Economic Development. The Regional Blueprint will identify a preferred land use scenario and transportation system for Kern County considering the application of alternative growth strategies. The Plan identifies a vision, values, goals, objectives, and implementing strategies that can be planned by Kern COG and implemented by local agencies within the County to reduce vehicle trips, vehicle miles traveled (VMT), and support increased walkability, passenger rail, public transit systems, and bicycling.

Further, public transit over the next 20 years has been enhanced in the 2011 RTP over existing conditions and even when compared to the current RTP (adopted in 2007). Such improvements will help mitigate expected increases in emissions resulting from increased population and employment and the impact of planned growth and development on the regional transportation system. Furthermore, the RTP includes references to a number of studies (some of which are described above). The Project improvements are expected to reduce VMT and vehicle trips and as a result, GHG emissions.

Kern COG cannot require that local agencies, Caltrans, the Air District or other agencies that use diesel-powered vehicles and equipment apply retrofit emission control devices, such as diesel oxidation catalysts and diesel particulate filters verified by CARB. Kern COG also cannot require that the same agencies use alternative forms of cement and asphalt that have lower GHG emissions. It is recommended however, that responsible agencies (local agencies, the Air District, Caltrans, and others) consider the implementation of such measures during individual project development and construction.

Both Kern COG and responsible agencies implementing projects outlined in the 2011 RTP will be required to adhere to any future applicable mandatory regulations regarding global warming resulting from the passage of AB 32 and AB 1493, but the exact character of such future implementing strategies is not known at this time. Kern COG and the local agencies will quantify GHG emissions consistent with Guidelines and requirements developed by CARB. Once the Guidelines are available, Kern COG will address GHG emissions and global warming impacts of projects contained in the 2011 RTP.

The following mitigation measures are intended to address regional and project-level impacts, as appropriate. For project-level impacts, the individual improvement project proponent or local jurisdiction will be responsible for ensuring adherence to the mitigation measures.

- Transportation

  - Work with member agencies to increase the number of Alternative Fuel Vehicles (AFV) in municipally owned vehicles;
  - Funding retrofit, repower or replacement of diesel vehicles with funding from applicable federal, state and local sources;
  - Encouragement of technology, such as electrification, to provide alternatives to operating the heating and air conditioning, refrigeration units while idling at distribution centers, warehouses, truck shops and other facilities where diesel trucks may reside overnight or for periods of several hours;
  - Subsidize carpool and vanpool programs that originate in Kern County'
  - Support efforts that further analyze GHG emission contributions from goods movement through transportation corridors, trucking and other relevant freight movement practices;
  - Support the use of grants, loans and incentives to assist local governments with the implementation of climate change response activities and GHG reduction strategies;
  - Support state legislation to provide incentive funds to local governments to develop and implement GHG reduction programs; and
  - Support efforts that will enable cities and counties to purchase new vehicles for local fleets that conform to state purchasing standards, are fuel efficient, low emission or use alternative fuels.

- Land Use (Blueprint)

  - Develop land use patterns, which encourage people to walk, bicycle, or use public transit for a significant number of their daily trips;
    - Use circulation elements of general plans to ensure that development is consistent and well connected by alternative transportation modes (as required by AB 1358 effective January 1, 2011);
    - Adopt transit-oriented or pedestrian-oriented design strategies and select areas appropriate for these designs in the general plan;
    - Support higher density development in proximity to commonly used services and transportation facilities, such as transit centers;
    - Promote a balance of housing, shopping, and other amenities on the urban fringe and outlying communities that service strategic rural employment areas such as military bases, prisons, wind/alternative energy areas, oil production/mining, agriculture/ranching, food processing, warehouse distribution/intermodal centers, travel centers, recreation areas, etc.;
    - Promote affordable housing affordable relative to average wages in the community to reduce commute distances;
    - Promote reduced travel by providing electric vehicles, bike, pedestrian and equestrian paths and park-and-ride lots;
    - Promote phasing of new housing developments that reduce the need for long distance commutes to work and retail centers while construction is underway;
    - Provide subsidies for alternative transportation such as vanpools and transit until such time as ridership is at a level that supports the minimum transit fare box subsidy requirements;
    - In transit-oriented areas, provide for express transit or bus rapid transit service and circulator feeder systems. Service should plan for direct access to the Bakersfield High Speed Rail station;
    - In transit-oriented areas, reduce parking requirements and provide car/vanpool parking areas;

  - In transit oriented areas include a transit pass/subsidy as part of the housing rental agreement, commercial rent agreement, employer benefit package, or monthly housing payment of new developments to ensure that express transit service has sufficient ridership to meet the minimum fare box requirement. and
  - Space walkable/bikeable transit centers a minimum of 1 – 3 miles apart to ensure that travel times compete with passenger vehicle travel times.
- In urban areas, develop in a compact, efficient form to reduce vehicle miles traveled and to improve the efficiency of alternatives to the automobile:
  - Use the control of public services to direct development to the most appropriate locations; and
  - Promote infill of vacant land and redevelopment sites.
- Encourage project site designs and subdivision street and lot designs that support walking, bicycling, and transit use:
  - Adopt design guidelines and standards promoting plans that encourage alternative transportation modes; and
  - Require certain sites to be created to allow convenient access by transit, bicycle, and walking.
- Accommodate projected population growth by identifying appropriate areas for urban and rural growth, economic development, and multi-modal transportation corridors that support smart growth principles;
- Promote 'downtowns' or 'urban centers' as the commercial, financial and social centers of communities. Promote higher density housing located adjacent to and within convenient walking distance to downtown, urban mixed use centers and/or transit corridors;
- Support and encourage policies and plans which direct growth to well planned neighborhoods and communities;
- Encourage the design and development of an effective transportation system that integrates all modes into a seamless, reliable, cost-efficient system, including intelligent transportation solutions and high tech communication options;
- Support intermodal travel including park-and-ride, rideshare, bicycle, rail and transit programs;
- Support increased mass transit connectivity and accessibility;
- Promote reduction of vehicle miles traveled;
- Promote the achievement and maintenance of State and Federal standards for air quality;
- Encourage General Plan, Community Plan and Specific Plan updates to include air quality elements, Greenhouse Gas Emission Reduction Plans and mitigation measures that reduce air pollution and vehicle miles traveled from existing and new development;
- Encourage the reduction of air pollution impacts from new developments;
- Help establish baseline GHG emission rates for municipalities; and
- Promote landscaping strategies that will reduce GHG.

- Energy

- Promote the use of LED technology or comparable energy-efficient technology for traffic lights, rail signals and other features compatible with LED or comparable energy-efficient technologies;
- Support the use of procurement practices that promote the use of energy efficient products and equipment;
- Support and coordinate efforts that address strategies to reduce greenhouse gases into planning efforts; and
- Promote energy efficiency, solar energy production and other methods of reducing GHG production.

- Emission Reduction Plan

  - Prior to or in conjunction with the adoption of the proposed 2014 RTP, Kern COG and/or its member agencies will develop a GHG Emissions Reduction Plan that includes the following:
    - General discussion of the potential impacts that GCC poses to the Kern County region, with particular focus on potential impacts related to RTP facilities, to the extent that such information is available;
    - A baseline inventory of total GHG emissions directly and indirectly from transportation in the County that currently exist, and review of potential targets and timelines for achieving GHG reductions;
    - Development of feasible GHG emissions reduction measures and strategies to achieve reductions in RTP GHG emissions. Such reduction measures may include construction of new transportation projects, modification of existing facilities or services, incentive or funding programs, pricing strategies, regulations or any other actions that reduce GHG emissions associated with RTP activities; and
    - State protocols and GHG emissions inventory mechanisms are necessary tools to track and monitor GHG emissions at the local level. Kern COG and member agencies must determine, in cooperation with the state, the solutions that will best minimize its potential risks and maximize its potential benefits.

- Intelligent Transportation Systems

  - Develop an Intelligent Transportation Systems strategy to implement the Integrated Performance Management Systems Network that will:
    - Interconnect the region's local transportation management centers, including the use of cameras, and computer hardware and software to detect and clear accidents;
    - Use technology to improve traffic signal timing in order to optimize traffic flow and transit service; and
    - Involve new equipment to improve on-time transit performance and provide real-time transit information at stops and stations.

- Alternative Fuel Vehicle and Infrastructure Toolkit for Local Governments

  - Kern COG will develop an Alternative Fuel Vehicle (AFV) and Infrastructure Toolkit for member agencies that will contain best practices related to ordinances, analytical tools, financing opportunities, codes, and standards related to reducing GHG emissions. Kern COG will identify the alternative fuel vehicle(s) (e.g. neighborhood electric vehicles) and alternative fuel infrastructure with the potential to result in the greatest GHG emission reductions. Kern COG will conduct a public education program for local governments and other public agencies, as appropriate to encourage the use of alternative fuel vehicles and infrastructure; and
  - Kern COG will work with its member agencies to increase the number of AFVs (i.e., vehicles not powered strictly by gasoline or diesel fuel) both in municipally owned vehicles, as well as those owned by franchisees of these cities, such as trash haulers, green waste haulers, street sweepers, and curbside recyclable haulers. Such AFVs shall have GHG emissions at least 10 percent lower than comparable gasoline- or diesel-powered vehicles. The Alternative Fuel Vehicle and Infrastructure Toolkit described above will include best practices strategies to aid in the transformation of municipally owned or contracted fleets, including vehicle fleets operated and/or funded, at least in part by Kern COG.

- Transportation Pricing Policy (GET Long Range Transit Study)

  Kern COG will prepare an analysis on the impacts and the viability of using pricing policies with the transit system and selected portions of the road network to encourage people to drive less and use transit, walking, and bicycling modes more. This study will identify strategies to reduce GHG emissions that will include, but are not limited to, free or reduced transit fares during "spare the air" days; fare-free zones on the transit system; transit vouchers; days on which transit is free; congestion pricing options for portions of the road system, such as tolls on freeways and highways; and congestion-pricing to enter certain high-traffic areas served by public transit (e.g. downtown areas). Kern COG shall adopt a transportation pricing policy based upon these strategies, and shall conduct seminars with local government staff, planning commissioners and elected officials and members of the private development, planning, engineering and design communities to disseminate these strategies.

- Public Education Program on Individual Transportation Behavior and Climate Change

  In conjunction with key partners such as local air districts, public utility providers, area chambers of commerce and others, Kern COG will create a public information program to educate the public about the connection between individual transportation behavior and global climate change, including transportation behavior modifications the public can make to reduce their GHG emissions over time. Kern COG shall include information on its website that is focused on global climate change. The website shall identify actions the public can take to reduce their carbon footprint, and provide web links to sources of information designed to promote alternative mode use (carpools, vanpools, public transit, bicycling, walking, telecommuting) and other travel demand management strategies.

- Workshop on Global Climate Change for Local Government Officials and Create GHG Emissions Reduction Strategies Toolkit

  - Kern COG will provide funding for a workshop on global climate change for local government officials that will focus on practical techniques that local governments can implement to reduce greenhouse gas emissions at the city and county level. Workshop topics shall include, but are not limited to the following:
    - The basic science behind climate change and its effects on the Kern County Region;
    - Addressing the California Environmental Quality Act (CEQA) and the effects of AB 32;
    - What cities and counties are doing to address climate change and CEQA;
    - Cost effective actions cities can take to reduce greenhouse emissions; and
    - Actions being taken in the Kern County area to advance and support innovative "green" business.

  - Kern Cog in conjunction with other key partners, shall produce a toolkit for local governments to use to take effective actions to reduce greenhouse gas emissions over time. The toolkit will incorporate recommendations by the workshop participants to identify which issues are important for the region and the tools and resources they would like to have available to reduce greenhouse emissions .

- Establish a Baseline for Kern's Own GHG Impacts

  - Starting in calendar year 2011, Kern COG shall measure and record the GHG emissions associated with its own operations in an accurate manner and in a format consistent with the California Climate Action Registry's own reporting protocol in order to establish a baseline against which any future GHG reductions may be applied. The report shall be independently audited by a State and Registry approved certifier. The report shall include the following elements:

- Indirect emissions from electricity and natural gas use;
- Direct emissions from mobile source combustion (agency vehicles);
- Indirect emissions from business-related employee air travel;
- Direct and Indirect emissions from employee commuting; and
- Indirect emissions associated with Kern COG purchasing practices.

➢ Kern COG shall continue to report on its own GHG emissions consistent with this format in subsequent years and track its progress in reducing emissions.

♦ Project level environmental documents shall analyze construction and maintenance Greenhouse Gas (GHG) emissions.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies. (Caltrans and local agencies).

When Mitigation Measures are to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

Cultural Resources

3.6 Mitigation

1. Individual improvement project-specific impacts on cultural resources will be identified at the earliest planning stages of the individual improvement project. Since avoidance is the preferred means for mitigating impacts on cultural resources, cultural resource specialists should be included on the individual improvement project planning teams and records searches, background research, Native American consultations, field inventories, and other investigations should be performed during initial routing studies or other comparable planning activities. To comply with state and federal laws and regulations governing cultural resources, the following specific activities will be completed prior to certification of the subsequent or individual improvement project EIR/EIS or other CEQA/NEPA documents.

♦ Records Searches

For each individual improvement project, a records search will be performed at the Southern San Joaquin Valley Information Center of the California Historical Resources Information System, housed at California State University, Bakersfield. Resources to be examined at the Information Center include site location and survey coverage base maps, listings on the National Register of Historic Places and California Register of Historic Resources, State Historic Property Data Files, National Register of Determined Eligible Properties, California Historical Landmarks, California Points of Historic Interest, and California Office of Historic Preservation Archaeological Determinations of Eligibility. As appropriate for each individual improvement project, background research will also be conducted at city and county historical societies, libraries,

museums, and other institutions that may have relevant information on the nature and location of cultural resources within the individual improvement project area.

- Native American Consultation

  For each individual improvement project, contact the Native American Heritage Commission (NAHC) in Sacramento and request a search of their Sacred Lands File for information on the individual improvement project area. The NAHC will also supply a list of Native American representatives whose traditional lands encompassed the individual improvement project area. Those included on the NAHC consultant list will be contacted by letter and follow-up telephone calls to request information about the study area, and to provide them the opportunity to articulate their views on possible impacts of the individual improvement project and appropriate mitigation measures.

- Paleontological Research

  Conduct a records and literature search at the appropriate institutions, review geological maps for potential fossiliferous formations, and prepare an initial assessment of paleontological resource sensitivity in the individual improvement project area. Compile a list of relevant sites and known fossiliferous formations, and assess each individual improvement project's potential to impact paleontologically significant resources.

- Archaeological Survey

  For each individual improvement project, systematically traverse unsurveyed areas on foot using transects spaced 15-20 meters apart. Previously surveyed areas, as indicated by the Information Center survey coverage base maps, will be resurveyed if prior surveys were completed more than ten years previously or if survey coverage was insufficient due to conditions at the time. Historical or prehistoric archaeological sites discovered within or immediately adjacent to the survey area will be documented according to current professional standards on the appropriate Department of Parks and Recreation forms (DPR-523). Previously recorded sites will be revisited, and their documentation will be updated to the current formats and standards. All sites, features, and isolates will be photographed using 35-millimeter and/or digital pictures, and their locations plotted on the appropriate USGS topographic 7.5' quadrangle. Planimetric site sketch maps will be prepared for each archaeological site, depicting site boundaries, concentrations, features, diagnostic artifacts, and areas of disturbance. Site locations will also be plotted using a Global Positioning System.

- Architectural Survey

  Buildings, structures, objects, linear cultural features, and other non-archaeological properties will be inventoried to current professional standards and recorded on the appropriate Department of Parks and Recreation forms (DPR-523). Documentation on previously recorded sites will be updated to the current formats and standards. All resources will be photographed using 35-millimeter and/or digital pictures, and their locations plotted on the appropriate USGS topographic 7.5' quadrangle.

- Significance Evaluation and Impact Assessment

  Any cultural resources that will be directly impacted by a proposed individual improvement project will be evaluated for significance according to the criteria of the National Register and/or California Register, as appropriate. If the boundaries of the resource or its spatial relationship to the impact area are unclear, then boundary definition using more detailed surface and subsurface investigations may be required.

Significance evaluations may require additional archival and background research, additional field documentation, or other studies. Evaluation of archaeological properties may require test excavations, backhoe trenching, or other forms of subsurface investigation; laboratory processing and analysis of recovered remains; and a variety of special technical studies. These evaluations will define the qualities of the resource that make it significant and assess site integrity as a means for judging the nature and extent of individual improvement project impacts. Significance evaluations and impact assessments will be performed by appropriately qualified specialists meeting the Secretary of Interior's Professional Qualifications Standards (FR 190: 44740–44741). Artifacts and other remains collected from the field, along with field records and other documentation, will be curated at the Museum of Anthropology, California State University, Bakersfield, or another institution capable of providing secure, long-term storage, care, and access to the public.

- Technical Report/EIR Sections

Prepare a technical report documenting the results of the records search, background research, Native American consultation, paleontological research, field surveys, resource evaluations, and other studies. Because these reports may detail locations within the individual improvement project areas known to be culturally and paleontologically sensitive, they will be confidential technical appendices to each EIR/EIS. Summary sections included in the body of the EIR/EIS will not disclose sensitive site location information. The confidential technical report and EIR/EIS sections will discuss the importance of historical, archaeological, and paleontological resources identified during the study, identify the potential for significant impacts, and discuss adequate and feasible mitigation measures. The reports will adhere to professional standards outlined by the State Office of Historic Preservation in *Archaeological Resource Management Reports (ARMR): Recommended Contents and Format* (Jackson 1990).

- Agency Consultation

For federally entailed projects, the lead federal agency must consult with the State Historic Preservation Officer (SHPO) regarding the identification, evaluation, and subsequent mitigative treatment of cultural resources. The SHPO does not play a role in the CEQA process unless state lands, state-owned properties, or unusually important resources are involved. For federal projects, the SHPO is asked to review and concur with the federal agency's findings regarding the significance of resources and the appropriate treatment. Initial consultation with the SHPO should occur early in the planning process, with follow-on consultation and review at each stage.

If the studies described above determine that significant cultural resources will be affected by the proposed individual improvement project, then additional impact mitigation may be required if the individual improvement project cannot be redesigned to avoid the resource. Impact mitigation may take a variety of forms depending on the nature of the site and the nature and extent impacts. As noted above, site avoidance is the preferred mitigation measure. If resources cannot be avoided entirely, portions of the resources outside the impact area may be preserved in an exclusion zone—a fenced area where construction equipment and personnel are not permitted. Together, avoidance and use of exclusion zones ensures the maximum *in-situ* preservation of significant cultural resources.

Where avoidance is infeasible and significant cultural resources are jeopardized by a individual improvement project, one or a combination of the following measures will be implemented:

- Data recovery excavation;
- Additional analysis of existing collections;

- Additional archival/historical research;
- Photographic documentation; and
- Archaeological monitoring during construction, followed by data recovery excavation or other appropriate measures if significant archaeological remains are exposed.

Final decisions regarding impact mitigation will be made in consultation among the individual improvement project proponent, regulatory agencies, technical specialists, and other interested parties. If data recovery excavation is the recommended mitigation, then the EIR/EIS must include a data recovery plan. Data recovery will be supervised by appropriately qualified specialists meeting the Secretary of Interior's Professional Qualifications Standards (FR 190: 44740–44741). Artifacts and other remains collected from the field, along with field records and other documentation, will be curated at the Museum of Anthropology, California State University, Bakersfield, or another institution capable of providing secure, long-term storage, care, and access to the public.

It should be noted that photographic documentation or other records of historical buildings or structures prepared to the standards of the Historic American Building Survey or Historic American Engineering Record (commonly referred to as HABS/HAER standards) may constitute appropriate treatment of effects according to federal regulations, but may not mitigate individual improvement project impacts to a level of less than significant according to CEQA standards and its defining case law.

2. When a construction activity could significantly disturb soils or geologic formations in areas identified as having a moderate to high potential to support paleontological resources, a qualified researcher must be stationed on-site to observe during excavation operations and recover scientifically valuable specimens. As part of this mitigation, the following actions should be taken:

   - A certified paleontologist shall be retained (or required to be retained) by the project implementing agency prior to construction to establish procedures for surveillance and the preconstruction salvage of exposed resources if fossil bearing sediments have the potential to be impacted.
   - The monitor shall provide preconstruction coordination with contractors, oversee original cutting in previously undisturbed areas of sensitive formations, halt or redirect construction activities as appropriate to allow recovery of newly discovered fossil remains, and oversee fossil salvage operations and reporting.
   - This measure shall be placed as a condition on all plans where excavation and earthmoving activity is proposed in a geologic unit having a moderate or high potential for containing fossils.
   - Excavations of paleontological resources should be overseen by the qualified paleontologist and the paleontological resources given to a local agency, or other applicable institution, where they could be displayed or used for research.

   Where practicable, routes and project designs that would permanently alter unique geologic features shall be avoided.

3. The cumulative impacts to cultural resources, due to the forecast growth and development associated with the 2011 RTP, would be mitigated using the same measures detailed for Impacts 3.6.1 and 3.6.2, in addition to the following measure.

   - Future impacts to cultural resources shall be minimized through cooperation and information sharing between the implementation agency and affected resource agencies.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies. (Caltrans and local agencies).

When Mitigation Measures are to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

Geology/Soils

3.7 Mitigation

1. Seismic Mitigation

   - Individual improvement project structures will be built by responsible agencies to the seismic standards contained in the most recent edition of the Uniform Building Code (UBC).

   - Implementing agencies will ensure that improvement projects located within or across active fault zones comply with design requirements, published by the CGS, as well as local, regional, state, and federal design criteria for construction of projects in seismic areas.

   The implementing agencies will guarantee that geotechnical analysis is conducted within construction areas to establish soil types and local faulting prior to individual improvement project design preparation.

2. Slope failure, long-term erosion, and unique geologic features mitigation:

   - The implementing agencies will ensure that individual improvement project designs provide adequate slope drainage and appropriate landscaping to minimize the occurrence of slope instability and erosion.

   - Design features will include measures to reduce erosion from storm water.

   - Road cuts will be designed to maximize the potential for revegetation.

   - Implementing agencies will ensure that projects avoid landslide areas and potentially unstable slopes wherever feasible.

   - Where practicable, routes and individual improvement project designs that would permanently alter unique geologic features will be avoided.

3. Subsidence mitigation:

   - Implementing agencies will ensure that geotechnical investigations are conducted by a qualified geologist to identify the potential for subsidence and expansive soils.

   - Recommended corrective measures, such as structural reinforcement and replacing soil with engineered fill, will be implemented in individual improvement project designs.

   - Implementing agencies will ensure that, prior to preparing individual improvement project designs, new and abandoned wells are identified within construction areas to ensure the stability of nearby soils.

4. Seismic mitigation:

   - Implementing agencies shall ensure that projects are designed in accordance with county and city code requirements for seismic ground shaking. The design of projects shall consider seismicity of the site, soil response at the site, and dynamic characteristics of the structure, in compliance with the appropriate California Building Code and State of California design standards for construction in or near fault zones, as well as all standard design, grading, and construction practices in order to avoid or reduce geologic hazards.

   - Implementing agencies shall ensure that projects located within or across Alquist- Priolo Zones comply with design requirements provided in Special Publication 117, published by the California Geological Survey, as well as relevant local, regional, state, and federal design criteria for construction in seismic areas.

   - The project implementing agencies shall ensure that geotechnical analyses from qualified geotechnical experts are conducted within construction areas to ascertain soil types and local faulting prior to preparation of project designs. These investigations would identify areas of potential failure and recommend remedial geotechnical measures to eliminate any problems.

5. Adverse soil mitigation:

   - Improvement projects with significant cuts or fill will include a geotechnical investigation to identify adverse soil conditions and develop recommendations for design and construction that would limit the effects of adverse soil and bedrock conditions.

   - Cut and fill plans will be prepared for all improvement projects where cut and fill will be reburied, so that all fill materials are properly designed, placed, and compacted.

   - Preparation of a detailed erosion control plan will be prepared to limit the effects of soil erosion and water degradation during improvement project construction, in accordance with permit conditions and requirements of the State Water Resources Control Board's Best Management Practices (BMPs), or equally effective measures will be employed.

6. State-owned and State mineral-reserved land mitigation:

   - Where possible, improvement projects will be designed by responsible agencies to limit potential impacts on State-owned or State mineral-reserved lands.

7. Cumulative mitigation:

   Mitigation measures 3.7.1 through 3.7.6 would be applied to this impact in addition to the following measure:

   - Future impacts to geologic resources shall be minimized through cooperation and information sharing between the implementation agency and affected resource agencies.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies. (Caltrans and local agencies).

When Mitigation Measures are to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

Hazards & Hazardous Materials

3.8 Mitigation

1. The following mitigation measure is included to ensure compliance with applicable regulations.

   - The implementation agency shall comply with all applicable laws, regulations, and health and safety standards set forth by federal, state, and local authorities that regulate the proper handling of such materials and their containers to the routine transport, use, and disposal of hazardous materials does not create a significant hazard to the public or the environment.

2. Release of hazardous materials mitigation:

   - Implementing agencies shall encourage the USDOT, the Office of Emergency Services, and Caltrans to continue to conduct driver safety training programs and encourage the private sector to continue conducting driver safety training.
   - Implementing agencies shall encourage the USDOT and the CHP to continue to enforce speed limits and existing regulations governing goods movement and hazardous materials transportation.

3. Contaminated sites mitigation:

   - Prior to approval of any RTP project, the project implementation agency shall consult all known databases of contaminated sites and undertake a standard Phase 1 Environmental Site Assessment in the process of planning, environmental clearance, and construction for projects included in the 2011 RTP. If contamination is found the implementing agency shall coordinate clean up and/or maintenance activities.

- Where contaminated sites are identified, the project implementation agency shall develop appropriate mitigation measures to assure that worker and public exposure is minimized to an acceptable level and to prevent any further environmental contamination as a result of construction.

- Local agencies should contact the Chevron Environmental Management Company (CEMC) to determine whether an improvement project may be in the vicinity of the Tidewater Oil Company or Standard Oil Company historical pipeline alignments. A map of the alignments is provided in Appendix B of this SEIR.

4. Cumulative mitigation:

- Mitigation Measures 3.8.1 through 3.8.3 as implemented by responsible agencies and private developers would address this impact.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies. (Caltrans and local agencies).

When Mitigation Measures are to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

Hydrology/Water Quality

3.9 Mitigation

1. Water quality mitigation::

- Improvement projects along existing facilities will include upgrades to storm water drainage facilities to accommodate increased runoff volumes. These upgrades may include the construction of detention basins or structures that will delay peak flows and reduce velocity.

2. Groundwater mitigation:

- Transportation network improvements will comply with local, state and federal floodplain regulations. Proposed transportation improvements will be engineered by responsible agencies to accommodate storm drainage flow.

- Responsible agencies should ensure that operational best management practices for street cleaning, litter control, and catch basin cleaning are provided to prevent water quality degradation. Responsible agencies implementing projects requiring continual water removal facilities will provide monitoring systems including long-term administrative procedures to ensure proper operations for the life of the improvement project.

3. Flood hazards mitigation:

   - Prior to construction, and when a potential drainage issue is known, a drainage study will be conducted by responsible agencies for new capacity-increasing projects. Drainage systems will be designed to maximize the use of detention basins, vegetated areas, and velocity dissipaters to reduce peak flows where possible. Transportation improvements will comply with federal, state and local regulations regarding storm water management. State-owned freeways must comply with Storm Water Discharge NPDES permit for Caltrans facilities.

   - Responsible agencies will ensure that new facilities include water quality control features such as drainage channels, detention basins, and vegetated buffers to prevent pollution of adjacent water resources by runoff.

   - Letters of Map Revision (LOMR) will be prepared and submitted to FEMA (when applicable) by responsible agencies where construction would occur within 100-year floodplains. The LOMR will include revised local base flood elevations for projects constructed within flood-prone areas.

4. Urban and construction runoff mitigation:

   - Improvement projects along existing facilities will include upgrades to storm water drainage facilities to accommodate increased runoff volumes. These upgrades may include the construction of detention basins or structures that will delay peak flows and reduce velocity.

5. Water quality, stormwater infiltration, groundwater recharge, flood hazards, wastewater treatment services, and water demand mitigation: Mitigation Measures 3.9.1 through 3.9.4 shall be applied to all development projects, as feasible, in addition to the following measures:

   - Local governments should encourage Low Impact Development and natural spaces that reduce, treat, infiltrate and manage stormwater runoff flows in all new developments.

   - Local governments should implement green infrastructure and water-related green building practices through incentives and ordinances. Green building resources include the U.S. Green Building Council's Leadership in Energy and Environmental Design, Green Point Rated Homes, and the California Green Builder Program.

   - Local governments should integrate water resources planning with existing greening and revitalization initiatives, such as street greening, tree planting, development and restoration of public parks, and parking lot conversions, to maximize benefits and share costs.

   - Developers, local governments, and water agencies should maximize permeable surface area in existing urbanized areas to protect water quality, reduce flooding, allow for groundwater recharge, and preserve wildlife habitat. New impervious surfaces should be minimized to the greatest extent possible, including the use of in-lieu fees and off-site mitigation.

   - Future impacts to water quality shall be avoided through cooperative planning, information sharing, and comprehensive pollution control measure development.

   - Local jurisdictions and water agencies are encouraged to continue regional-scale planning for improved stormwater management and groundwater recharge. Future adverse impacts shall be avoided through cooperative planning, information sharing, and comprehensive implementation efforts.

- Local governments should prevent development in flood hazard areas that do not have appropriate protections, especially in alluvial fan areas of the region.

- Local jurisdictions should encourage new development and industry to locate in those service areas with existing wastewater infrastructure and treatment capacity, making greater use of those facilities prior to incurring new infrastructure costs.

- Wastewater treatment agencies are encouraged to have expansion plans, approvals and financing in place once their facilities are operating at 80 percent of capacity.

- Local jurisdictions should promote reduced wastewater system demand by: designing wastewater systems to minimize inflow and increase upstream treatment and infiltration to the extent feasible, reducing overall source water generation by domestic and industrial users, deferring development approvals for industries that generate high volumes of wastewater until wastewater agencies have expanded capacity.

- Project developers and agencies should consider potential climate change hydrology and attendant impacts on available water supplies and reliability in the process of creating or modifying systems to manage water resources for both year round use and ecosystem health.

- Local water agencies should continue to evaluate future water demands and establish the necessary supply and infrastructure to meet that demand.

- Developers, local governments, and water agencies should include conjunctive use as a water management strategy when feasible.

- Developers and local governments should reduce exterior uses of water in public areas, and should promote reductions in private homes and businesses, by shifting to drought-tolerant native landscape plantings (xeriscaping), using weather-based irrigation systems, educating other public agencies about water use, and installing related water pricing incentives.

- Future impacts to water supply shall be minimized through cooperation, information sharing, and program development.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies. (Caltrans and local agencies).

When Mitigation Measures are to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

Land Use/Planning

3.10 Mitigation

1. The impact on significant agricultural resources will be evaluated as part of the appropriate improvement project-specific environmental review. Mitigation measures will be identified to minimize impacts. Implementation agencies will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with all mitigation measures.

    - Individual projects will be consistent with local land use plans and policies that designate areas for urban land use and preserve agricultural lands that support the economic viability of agricultural activities.

    - Prior to final approval of each individual improvement project, the implementing agency will conduct the appropriate project-specific environmental review, including consideration of potential land use impacts.

1. Impacts to sensitive receptors will be evaluated as part of the appropriate project-specific environmental review, and mitigation measures will be identified to minimize impacts. Implementation agencies will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with all mitigation measures.

    - Prior to commencing construction activities on individual projects, project implementation agencies will comply with applicable federal, state and applicable city and county land use plans, policies, and regulations.

    - Prior to commencing construction activities with individual projects, implementation agencies will obtain necessary local permits and meet conditions for approval from applicable cities and counties.

    - Prior to final approval of each individual improvement project, the implementing agency will conduct the appropriate project-specific environmental review, including consideration of potential land use impacts.

    - Potential significant impacts to land uses will be mitigated.

2. The impact on open space and community recreation areas will be evaluated as part of the appropriate individual improvement project-specific environmental review and mitigation measures will be identified to minimize impacts. Implementation agencies will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with all mitigation measures.

    - Implementation agencies will ensure that projects are consistent with federal, state, and local plans that preserve open space and recreation.

    - Implementation agencies will identify open space and recreation areas that could be preserved and will include mitigation measures (such as dedication or payment of in-lieu fees) for the loss of open space.

    - Prior to final approval of each individual improvement project, the implementing agency will conduct the appropriate project-specific environmental review, including consideration of loss of open space and recreation.

- Potential significant impacts to open space will be mitigated.

- For projects that require approval or funding by the U.S. Department of Transportation, implementation agencies will comply with Section 4(f) of the U.S. Department of Transportation Act.

3. The impact on significant agricultural resources will be evaluated as part of the appropriate individual improvement project-specific environmental review, and mitigation measures will be identified to minimize impacts. Implementation agencies will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with all mitigation measures.

   - Individual projects will be consistent with federal, state, and local policies that preserve agricultural lands and support the economic viability of agricultural activities, as well as policies that provide compensation for property owners if preservation is not feasible.

   - For projects in agricultural areas, individual improvement project implementation agencies will contact the California Department of Conservation and the County Agricultural Commissioner's office to identify the location of prime farmlands and lands that support crops considered valuable to the local or regional economy.

   - Prior to final approval of each individual improvement project, the implementing agency will establish conservation easement programs to mitigate impacts to prime farmland.

   - Prior to final approval of each individual improvement project, the implementing agency will avoid impacts to prime farmlands or farmlands that support crops considered valuable to the local or regional economy.

   - Prior to final approval of each individual improvement project, the implementing agency will encourage enrollments of agricultural lands in the Williamson Act.

4. The mitigation measures listed above for Impacts 3.10.1 through 3.10.5 would be applied as mitigation for this impact. In addition, the following measure would apply.

   - Regional planning efforts will be used to build a consensus in the region to support changes in land use to accommodate future population growth while maintaining the quality of life in the region.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies. (Caltrans and local agencies).

When Mitigation Measures are to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

Noise

3.11 Mitigation

1. As part of project-specific environmental review, a detailed evaluation of noise impacts will be undertaken. Project-specific mitigation measures will be identified, as necessary. All mitigation measures will be included in project-level analysis, as appropriate. The implementing agency or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with mitigation measures.

   - Implementing agencies will comply with all local sound control and noise level rules, procedures, regulations, and ordinances.

   - Implementing agencies will limit the hours of construction to between 6:00 a.m. and 8:00 p.m. on Monday through Friday and between 7:00 a.m. and 8:00 p.m. on weekends.

   - Equipment and trucks used for individual improvement project construction will utilize the best available noise control techniques (including mufflers, use of intake silencers, ducts, engine enclosures and acoustically attenuating shields or shrouds) in order to minimize construction noise impacts.

   - Impact equipment (e.g., jackhammers, pavement breakers, and rock drills) used for individual improvement project construction will be hydraulically or electrical powered wherever feasible to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatically powered tools is unavoidable, an exhaust muffler on the compressed air exhaust will be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves will be used where feasible, and this could achieve a reduction of 5 dBA. Quieter procedures will be used such as drilling rather than impact equipment whenever feasible.

   - Implementing agencies will ensure that stationary noise sources will be located as far from sensitive receptors as possible. If they must be located near existing receptors, they will be adequately muffled.

   - Implementing agencies will designate a complaint coordinator responsible for responding to noise complaints received during the construction phase. The name and phone number of the complaint coordinator will be conspicuously posted at construction areas and on all advanced notifications. This person will be responsible for taking steps required to resolve complaints, including periodic noise monitoring, if necessary.

   - Noise generated from any rock-crushing or screening operations performed within 3,000 feet of any occupied residence will be mitigated by the individual improvement project proponent by strategic placement of material stockpiles between the operation and the affected dwelling or by other means approved by the local jurisdiction.

   - Implementing agencies will direct contractors to implement appropriate additional noise mitigation measures including, but not limited to, changing the location of stationary construction equipment, shutting off idling equipment, rescheduling construction activity, notifying adjacent residents in advance of construction work, and installing acoustic barriers around stationary construction noise sources to comply with local noise control requirements.

- Implementing agencies will implement use of portable barriers during construction of subsurface barriers, debris basins, and storm water drainage facilities.

- No pile-driving or blasting operations will be performed within 3,000 feet of an occupied residence on Sundays, legal holidays, or between the hours of 8:00 p.m. and 8:00 a.m. on other days. Any variance from this condition will be obtained from the individual improvement project proponent and must be approved by the local jurisdiction.

- Wherever possible, sonic or vibratory pile drivers will be used instead of impact pile drivers, (sonic pile drivers are only effective in some soils). If sonic or vibratory pile drivers are not feasible, acoustical enclosures will be provided as necessary to ensure that pile-driving noise does not exceed speech interference criterion at the closest sensitive receptor.

- In residential areas, pile driving will be limited to daytime working hours.

- Engine and pneumatic exhaust controls on pile drivers will be required as necessary to ensure that exhaust noise from pile driver engines are minimized to the extent feasible.

- Where feasible, pile holes will be pre-drilled to reduce potential noise and vibration impacts.

2. Noise-sensitive land use mitigation

- As part of the appropriate environmental review of each project, a project specific noise evaluation shall be conducted and appropriate mitigation identified and implemented.

- Project implementation agencies shall employ, where their jurisdictional authority permits, land use planning measures, such as zoning, restrictions on development, site design, and use of buffers to ensure that future development is compatible with adjacent transportation facilities.

- Project implementation agencies shall, to the extent feasible and practicable, maximize the distance between noise-sensitive land uses and new roadway lanes, roadways, rail lines, transit centers, park-and-ride lots, and other new noise generating facilities.

- Project implementation agencies shall construct sound reducing barriers between noise sources and noise-sensitive land uses. Sound barriers can be in the form of earth-berms or soundwalls. Constructing roadways so as appropriate and feasible that they are depressed below-grade of t:he existing sensitive land uses also creates an effective barrier between the roadway and sensitive receptors.

- Project implementation agencies shall, to the extent feasible and practicable, improve the acoustical insulation of dwelling units where setbacks and sound barriers do not sufficiently reduce noise.

- The project implementation agencies shall implement, to the extent feasible and practicable, speed limits and limits on hours of operation of rail and transit systems, where such limits may reduce noise impacts.

- Passenger stations, central maintenance facilities, decentralized maintenance facilities, and electric substations should be located away from sensitive receptors.

3. Mitigation measures intended to reduce the noise impacts on sensitive receptors are part of the 2011 RTP. These include: site design, buffers, soundwalls, etc.

   Further reduction in noise impacts would be obtained through the implementation of the measures described in 3.11.1 and 3.11.2.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies. (Caltrans and local agencies).

When Mitigation Measures are to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

Population/Housing

3.12 Mitigation

1. As part of the appropriate project-specific environmental review, population and job displacement impacts will be evaluated. Mitigation measures will be identified to minimize impacts. Implementation agencies will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with all mitigation measures.

   - For projects with the potential to displace homes or businesses, project implementation agencies will evaluate alternate route alignments and transportation facilities that minimize the displacement of homes and businesses. An iterative design and impact analysis would help where impacts to persons or businesses are involved. Potential impacts will be minimized to the extent feasible. If possible, existing rights-of-way should be used.

   - Implementation agencies will identify businesses and residences to be displaced. As required by law, relocation and assistance will be provided to displaced residents and businesses, in accordance with the federal Uniform Relocation and Real Property Acquisition Policies Act of 1970 and the State of California Relocation Assistance Act, as well as any applicable City and County policies.

   - Implementation agencies will develop a construction schedule that minimizes potential neighborhood deterioration from protracted waiting periods between right-of-way acquisition and construction.

2. As part of the appropriate project-specific environmental review, community disruption or division will be evaluated. Mitigation measures will be identified to minimize impacts. Implementation agencies will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with all mitigation measures.

- Implementation agencies will design new transportation facilities that protect access to existing community facilities. During the design phase of the individual improvement project, community amenities and facilities should be identified and access to them considered in the design of the individual improvement project.

- Implementation agencies will design roadway improvements, in a manner that minimizes barriers to pedestrians and bicyclists. During the design phase, pedestrian and bicycle routes will be determined that permit easy connections to community facilities nearby in order not to divide the communities.

4. The mitigation measures listed above for Impacts 3.12.1 and 3.12.2 in the Draft SEIR would be applied as mitigation for this impact. In addition, the following measure would apply:

    - Regional planning efforts will be used to build a consensus in the region to support changes in population, housing and employment to accommodate future growth while maintaining the quality of life in the region.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies. (Caltrans and local agencies).

When Mitigation Measures are to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

Public Utilities, Other Utilities & Services Systems

3.13 Mitigation

1. As part of individual improvement project-specific environmental review, implementation agencies will evaluate the impacts on police, fire, and medical services in the County. Appropriate mitigation measures should be identified for all impacts. The implementation of projects by agencies or local jurisdiction will be responsible for ensuring adherence to the mitigation measures. Kern COG will be provided with documentation indicating compliance with mitigation measures.

    - Prior to construction, the implementation agency will ensure that all necessary local and state road and railroad encroachment permits are obtained. The implementation agency also will comply with all applicable conditions of approval. As deemed necessary by the governing jurisdiction, the road encroachment permits may require the contractor to prepare a traffic control plan in accordance with professional engineering standards prior to construction. Traffic control plans should include the following requirements:

        - Identify all roadway locations where special construction techniques (e.g., directional drilling or night construction) would be used to minimize impacts to traffic flow;
        - Develop circulation and detour plans to minimize impacts to local street circulation. This may include the use of signing and flagging to guide vehicles through and/or around the construction zone;
        - Schedule truck trips outside of peak morning and evening commute hours;

- Limit lane closures during peak hours to the extent possible;
- Use haul routes, minimizing truck traffic on local roadways, to the extent possible;
- Include detours for bicycles and pedestrians in all areas potentially affected by individual improvement project construction;
- Install traffic control devices as specified in the California Department of Transportation Manual of Traffic Controls for Construction and Maintenance Work Zones;
- Develop and implement access plans for highly sensitive land uses such as police and fire stations, transit stations, hospitals, and schools. Access plans will be developed with the facility owner or administrator. To minimize disruption of emergency vehicle access, affected jurisdictions will be asked to identify detours for emergency vehicles, which will then be posted by the contractor. The facility owner or operator will be notified in advance of the timing, location, and duration of construction activities and the locations of detours and lane closures;
- Store construction materials only in designated areas; and
- Coordinate with local transit agencies for temporary relocation of routes or bus stops in work zones, as necessary.

- Projects requiring police protection, fire service, and emergency medical service will coordinate with the local fire department and police department to ensure that the existing public services and utilities will be able to handle the increase in demand for their services. If the current levels of service at the individual improvement project site are found to be inadequate, infrastructure improvements and personnel requirements for the appropriate public service will be identified in each individual improvement project's CEQA documentation.

- The growth inducing potential of individual projects will be carefully evaluated so that the full implications of the individual improvement project are understood. Individual environmental documents will quantify indirect impacts (growth that could be facilitated or induced) on public services and utilities. Lead and responsible agencies should then make any necessary adjustments to the applicable General Plan.

2. As part of individual improvement project-specific environmental review, implementation agencies will evaluate the impacts on demand for solid waste, wastewater, and potable water services in the County. Appropriate mitigation measures should be identified for all impacts. The implementation agencies or local jurisdiction will be responsible for ensuring adherence to the mitigation measures. Kern COG will be provided with documentation indicating compliance to mitigation measures.

- Projects requiring wastewater service, solid waste collection, or potable water service will coordinate with the local public works department to ensure that the existing public services and utilities would be able to handle the increase. If the current infrastructure servicing the individual improvement project site is found to be inadequate, infrastructure improvements for the appropriate public service utility will be identified in each individual improvement project's CEQA documentation.

- Reclaimed water will be used for landscaping purposes instead of potable water wherever feasible.

- Each of the proposed projects will comply with applicable regulations related to solid waste disposal.

- The construction contractor will work with the County Recycling Coordinator to ensure that source reduction techniques and recycling measures are incorporated into individual improvement project construction.

- The amount of solid waste generated during construction will be estimated prior to construction, and appropriate disposal sites will be identified and utilized.

3. As part of individual improvement project environmental review, individual agencies will evaluate the impacts resulting from soil accumulation during construction of the projects. Appropriate mitigation measures will be identified for all impacts. The implementation agencies or local jurisdiction will be responsible for ensuring adherence to the mitigation measures. Kern COG will be provided with documentation indicating compliance with mitigation measures.

   Implement appropriate measures, such as the washing of construction vehicles undercarriages before leaving the construction site or increasing the use of street cleaning machines, to reduce the amount of soil on local roadways as a result of construction.

4. Underground utility mitigation:

   - As part of individual improvement project environmental review, implementation agencies will evaluate the impacts resulting from the potential for severing underground utility lines during construction of the projects. Appropriate mitigation measures will be identified for all impacts. The implementation agencies or local jurisdiction will be responsible for ensuring adherence to mitigation measures. Kern COG will be provided with documentation indicating compliance with mitigation measures.

   - Prior to construction, the implementing agency or contractor will identify the locations of existing utility lines. All known utility lines will be avoided during construction.

5. Cumulative mitigation:

   - The growth inducing potential of individual projects shall be carefully evaluated so that the full implications of the projects are understood. Individual environmental documents shall quantify indirect impacts (growth that could be facilitated or induced) on public services and utilities to the extent feasible.

   - The California Integrated Waste Management Board shall continue to enforce solid waste diversion mandates that are enacted by the Legislature.

   - Local jurisdictions shall continue to adopt programs to comply with state solid waste diversion rate mandates and, where possible, shall encourage further recycling to exceed these rates.

   - Local jurisdictions shall implement or expand city or county-wide recycling and composting programs for residents and businesses. This could include extending the types of recycling services offered (e.g., to include food and green waste recycling) and providing public education and publicity about recycling services.

   - Project implementation agencies shall coordinate regional approaches and strategic siting of waste management facilities.

   - Project implementation agencies shall prioritize siting of new solid waste management facilities including recycling, composting, and conversion technology facilities in conjunction with existing waste management or material recovery facilities.

   - Project implementation agencies shall increase programs to educate the public and increase awareness of reuse, recycling, composting, and green building benefits and raise consumer education issues at the county and city level, as well as at local school districts and education facilities.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies. (Caltrans and local agencies).

When Mitigation Measures are to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

Transportation/Traffic

3.14 Mitigation

1. Measures intended to reduce vehicle miles traveled and reduce congestion are part of the 2011 RTP. These include: increasing rideshare and work-at-home opportunities to reduce demand on the transportation system, investments in non-motorized transportation and maximizing the benefits of the land use/transportation connection, other Travel Demand Management measures described in the 2011 RTP and in local agency General Plans, and key transportation investments targeted to reduce congestion levels and improve LOS.

2. As part of individual improvement project environmental review, individual agencies will consider impacts and plan for grade separations along major thoroughfares, identify to the extent feasible, improvements to existing at-grade highway-rail crossings caused by increases in traffic volumes, and provide, to the extent possible, appropriate fencing to limit the access of trespassers onto the railroad right-of-way. The implementation agencies or local jurisdiction will be responsible for ensuring adherence to the mitigation measure. Kern COG will be provided with documentation indicating compliance with the mitigation measure.

Energy & Energy Conservation

3.15 Mitigation

1. Project implementation agencies shall review energy impacts as part of any CEQA-required project-level environmental analysis and specify appropriate mitigation measures for any identified energy impacts.

2. During the design and approval of transportation improvements implemented under the proposed 2011 RTP, the following energy efficiency measures shall be incorporated when applicable:

    - The design or purchase of any lighting fixtures including but not limited to lighting at transit stations, arterials or freeways, and parking structures/lots shall achieve energy reductions beyond an estimated baseline energy use for such lighting.
    - LED technology shall be used for all new or replaced traffic lights, rail signals, and other features compatible with LED technology.

3. Local agencies should consider various best practices and technological improvements that can reduce the consumption of fossil fuels such as:

   - Expanding light-duty vehicle retirement programs
   - Increasing commercial vehicle fleet modernization
   - Implementing driver training modules on fuel consumption
   - Replacing gasoline powered mowers with electric mowers
   - Reducing idling from construction equipment
   - Incentivizing alternative fuel vehicles and equipment
   - Developing infrastructure for alternative fueled vehicles
   - Implementing truck idling rules, devices, and truck-stop electrification
   - Requiring electric truck refrigerator units
   - Reducing locomotives fuel use
   - Modernizing older off-road engines and equipment
   - Encouraging freight mode shift
   - Limit use and develop fleet rules for construction equipment
   - Requiring zero-emission forklifts

4. Local agencies should include energy analyses in environmental documentation and general plans with the goal of conserving energy through the wise and efficient use of energy. For any identified energy impacts, appropriate mitigation measures should be developed and monitored. Kern COG recommends the use of Appendix F, Energy Conservation, of the *CEQA Guidelines.*

5. Local agencies should streamline permitting and provide public information to facilitate accelerated construction of solar and wind power.

6. Local agencies should adopt a "Green Building Program" to promote green building standards. Green buildings can reduce local environmental impacts, regional air pollutant emissions and global greenhouse gas emissions. Green building standards involve everything from energy efficiency, usage of renewable resources and reduced waste generation and water usage. For example, water-related energy use consumes 19 percent of the state's electricity. The residential sector accounts for 48 percent of both the electricity and natural gas consumption associated with urban water use. While interest in green buildings has been growing for some time, cost has been a main consideration as it may cost more up front to provide energy-efficient building components and systems. Initial costs can be a hurdle even when the installed systems will save money over the life of the building. Energy efficiency measures can reduce initial costs, for example, by reducing the need for over-sized air conditioners to keep buildings comfortable. Undertaking a more comprehensive design approach to building sustainability can also save initial costs through reuse of building materials and other means.

   A comprehensive study of the value of green building savings is the 2003 report to California's Sustainable Building Task Force. In the words of the report: "While the environmental and human health benefits of green building have been widely recognized, this comprehensive report confirms that minimal increases in upfront costs of about 2% to support green design would, on average, result in life cycle savings of 20% of total construction costs -- more than ten times the initial investment. For example, an initial upfront investment of up to $100,000 to incorporate green building features into a $5 million project would result in a savings of $1 million in today's dollars over the life of the building."

7. Local governments should alter zoning to improve jobs/housing balance, create communities where people live closer to work, and bike, walk, and take transit as a substitute for personal auto travel. Creating walkable, transit oriented nodes would generally reduce energy use and greenhouse gas emissions. Residential energy use (electricity and natural gas) accounts for 14 percent of California's greenhouse gas emissions. It is estimated that households in transit-oriented developments drive 45 percent less than residents in auto-dependent neighborhoods. In addition, mixed land uses (i.e., residential developments near work places, restaurants, and shopping centers) with access to public transportation have been shown to save consumers up to 512 gallons of gasoline per year. Furthermore, studies have shown that the type of housing (such as multi-family) and the size of a house have strong relationships to residential energy use. Residents of single-family detached housing consume over 20 percent more primary energy than those of multifamily housing and 9 percent more than those of single-family attached housing.

8. Kern COG shall work with its member agencies to increase the number of AFVs (i.e., vehicles not powered strictly by gasoline or diesel fuel) both in municipally owned vehicles, as well as those owned by franchisees of these cities, such as trash haulers, green waste haulers, street sweepers, and curbside recyclable haulers.

9. Bid solicitations for construction of projects proposed in the 2011 RTP and subsequent RTP updates shall preference the use of alternative formulations of cement and asphalt with reduced GHG emissions to the extent that such cement and asphalt formulations are available at a reasonable cost in the marketplace. Solicitations shall also preference the recycling of construction waste and debris if market conditions permit.

10. Kern COG shall continue to develop, in coordination with the California Air Resources Board, a data and information collection and analysis system that provides an understanding of the energy demand and greenhouse gas emissions in the Kern region.

11. All mitigation measures listed in Chapter 3, Section 3.5.1, are incorporated by reference and shall be implemented by implementing agencies to address energy conservation impacts.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies. (Caltrans and local agencies).

When Mitigation Measures are to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

Kern COG

2011

Regional Transportation Plan






Final Subsequent Environmental Impact Report

Final Subsequent Environmental Impact Report for the Kern County 2011 Regional Transportation Plan

July 6, 2010

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1.0 INTRODUCTION

The California Environmental Quality Act (CEQA) requires that a Final Subsequent Environmental Impact Report (FSEIR) must be prepared, certified, and considered by decision-makers prior to taking action on a project. The Final SEIR provides the local agency with an opportunity to respond to comments received on the Draft SEIR and to incorporate any changes or additions necessary to clarify and/or supplement the information contained in that document. This Final SEIR, therefore, represents the culmination of all environmentally related issues raised during the comment period on the Draft SEIR for the Kern COG 2011 Regional Transportation Plan (RTP). In addition, this Final SEIR contains a Mitigation Monitoring and Reporting Program that identifies the necessary processes that are required to ensure that the mitigation measures recommended in the Draft SEIR are implemented. Finally, the FSEIR contains the Statement of Overriding Considerations, which identifies the significant, adverse, and unavoidable impacts in the Draft SEIR. The Kern COG Board of Directors is required to balance the benefits of the proposed Project (RTP) against its unavoidable environmental risks in determining whether to approve the Project.

1.1 FORMAT AND SCOPE

This document has been prepared by VRPA Technologies, Inc. (VRPA) to address the required components described above. The forty-five day Draft SEIR review and comment period began on April 30, 2010 and ended on June 14, 2010. Comments received and staff responses to those comments are contained in Section 2 of this Final SEIR. Section 3 provides a listing of changes, additions, and corrections to the Draft SEIR recommended by VRPA. Such changes, additions, and corrections are necessary to address revisions resulting from written comments on the Draft EIR and other necessary changes identified by staff. In addition, this document also includes the Statement of Overriding Considerations (reference Exhibit A) and the Mitigation Monitoring and Reporting Program (reference Exhibit B).

The Final SEIR is composed of the following documents and incorporates them by reference:

- Kern COG 2011 Regional Transportation Plan, Draft Subsequent Environmental Impact Report, April 30, 2010;
- Kern COG 2011 Regional Transportation Plan, April 30, 2010; and
- Kern COG 2011 Regional Transportation Plan, Final Subsequent Environmental Impact Report, July 6, 2010.

1.2 PROJECT DESCRIPTION

The project, as defined by CEQA Statutes, Section 21065, is the preparation of the 2011 Regional Transportation Plan. Kern Council of Governments (Kern COG) has prepared the RTP as required by Section 65080 et seq., of Chapter 2.5 of the *California Government Code* as well as federal guidelines pursuant to the requirements of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). The RTP must also meet Transportation Conformity for the Air Quality Attainment Plan per 40 CFR Part 51 and 40 CFR Part 93. In addition, the RTP must address requirements set forth in Assembly Bill 32, the California Global Warming Solutions Act of 2006. Finally, the California Transportation Commission has prepared guidelines (most recently adopted by the Commission in April 2010 plus an Addendum addressing Climate Change and Greenhouse Gas Emissions adopted by the Commission on May 29, 2008) to assist in the preparation of RTPs pursuant to Section 14522 of the *Government Code*.

As the designated Regional Transportation Planning Agency (RTPA), Kern COG is mandated by state and federal law to update the Regional Transportation Plan every four (4) years. The 2007 RTP, adopted on May 17, 2007 by Kern COG, included a list financially constrained improvement projects. On January 15, 2009, Kern COG amended the 2007 RTP (Amendment #1) to reflect changes to the list of projects and certified an Addendum EIR (AEIR) to address potential environmental effects. Improved project financing sources and project delivery schedules reflected in the 2007 RTP and in Amendment #1 were revised again as part of RTP Amendment #2 approved on September 17, 2009.

The RTP is used to guide the development of the Regional Transportation Improvement Program (RTIP). The RTIP is the programming document used to plan the construction of regional transportation projects and requires State Department of Transportation (Caltrans) approval. No project-level assessments of environmental impacts are addressed by this EIR. The RTP is also used as a transportation planning document by each of the twelve member jurisdictions of Kern COG. The members include the County of Kern and the cities of Arvin, Bakersfield, California City, Delano, Maricopa, McFarland, Ridgecrest, Shafter, Taft, Tehachapi, and Wasco.

The RTP identifies the region's mobility needs and issues through to the year 2035, sets forth an action plan of projects and programs to address the needs consistent with the adopted policies, and documents the financial resources needed to implement the plan. Additional areas of emphasis and policy initiatives in the 2011 RTP include Climate Change (including a Climate Change Plan and other greenhouse gas policies), Environmental Justice, Goods Movement, and Blueprint Planning. In addition, the 2011 RTP will include updated project lists and updated performance measures.

The 2011 RTP consists of required elements and is organized into various chapters. A description of each Chapter for the RTP follows.

- Chapter 1. Introduction;
- Chapter 2. Transportation Planning Policies;
- Chapter 3. Planning Assumptions;
- Chapter 4. Strategic Investments;
- Chapter 5. Financing Transportation;
- Chapter 6. Future Links;
- Chapter 7. Monitoring Progress;
- Chapter 8. References; and
- Appendices. (Includes the San Joaquin Valley Regional Transportation Overview and other required documents).

2.0 WRITTEN COMMENTS AND FINAL RESPONSES TO COMMENTS

(*Comments received are provided beginning on Page 2-9)*

FROM: Scott Morgan, Acting Director, State Clearinghouse

DATED: June 16, 2010

RESPONSE #1: No comments regarding the Draft Subsequent Environmental Impact Report (SEIR) were received by the State Clearinghouse from State agencies.

FROM: Chris Ganson, Environmental Review Office, United States Environmental Protection Agency, Region IX

DATED: June 21, 2010

RESPONSE #2: Thank you for your comments regarding the 2011 RTP and its Draft SEIR. Kern COG finds the EPA's recommendations and guidance most helpful. As noted in the EPA letter, the comments provided will be incorporated when Kern COG begins its 2014 RTP that will comply with the new federal surface transportation act, as well as State requirements from AB 32 and SB 375.

The 2011 RTP incorporates most of the recommendations made. For example, with this update, Kern COG has incorporated the Caltrans' *Smart Mobility Framework* in the RTP's performance measure section of Chapter 2.

Further, staff agrees with EPA's request to "expand discussion of impacts to critical habitat areas and connect it to a broader regional mitigation strategy in the RTP" and incorporated EPA's recommendations as mitigation measures in Chapter 3 of this Final SEIR (titled Changes to the Draft SEIR).

Finally, the Draft SEIR contains information regarding the use of available data used to inform regional transportation planning decisions. The Draft SEIR provides a detailed description of data sources and information available to identify potential natural or historic resource impacts, as well as appropriate mitigation measures to address impacts associated with the short- and long-range improvement projects to be implemented by various state, local, and other agencies. The Draft SEIR is incorporated in the 2011 RTP by reference. In addition, the specific references to each data source listed in the comment letter, which was not included in the Draft SEIR, has been included in Chapter 3 of the Final SEIR (titled Changes to the Draft SEIR) including U.S. Fish & Wildlife Service's species recovery plans, the USDA Natural Resources Conservation Service wetland data, the Nature Conservancy data and regional planning document, and local non-profit and land trust group information.

FROM: Bill Pfanner, Supervisor, Local Energy & Land Use Assistance Unit, Special Projects Office, Fuels & Transportation Division, California Energy Commission

DATED: May 13, 2010

RESPONSE #3: While the 2011 SEIR Notice of Preparation did not indicate expected Energy and Energy Conservation impacts that would result from the 2011 Regional Transportation Plan, potential impacts and mitigation measures to fully address such impacts have been incorporated in Chapter 3 of this Final SEIR (Changes to the Draft SEIR) to ensure compliance with Appendix F of CEQA. Further, energy impacts associated with the 2011 RTP are not expected to be greater than other project alternatives analyzed in the Draft SEIR. Finally, remaining significant effects are not expected and overriding considerations and findings will not be required.

FROM: Eugene S. Wilson, California Clean Energy Committee

DATED: June 10, 2010

RESPONSE #4: Thank you for your comments regarding the 2011 Regional Transportation Plan and its Draft SEIR. We are responding paragraph-by-paragraph, as numbered on the attached copy of your letter.

Paragraphs 1 through 5 require no response.

Paragraph 6. The 2011 Regional Transportation Plan (RTP) is a program level document, which is reflected in the level of analysis provided in its SEIR. Hence, project-level analysis and discussion are not provided and project life cycle analysis would not be appropriate. The document does provide annual numbers for climate change emissions, and cumulative analysis has been prepared. The transportation modeling undertaken for this programmatic plan combines projects using a cumulative analysis for the year 2035. This cumulative analysis looks at some of the life cycle variables, including congestion. Many of the projects planned to be built more than 10 years out are not well defined, making a detail lifecycle analysis not possible. In addition, many of the lifecycle issue that you suggest we review are one time episodic releases of CO2 and account for a relatively small fraction of the overall CO2 emissions accounted for in the cumulative analysis. While project life cycle analysis can be done for individual projects, it is not suitable for this programmatic-level plan, which includes a wide variety of multi modal projects. It is also likely that some of the listed projects in Table 4-1 will have a life cycle horizon year beyond the horizon year of this plan (2035). In order to determine a lane mile of roadway, analysis of individual projects would be necessary. This will occur as individual projects are funded and individual agencies move forward to construction subsequent to preparation of the appropriate level of environmental analysis.

In response to this comment Kern COG has added the following mitigation to Chapter 3 of this Final SEIR (Changes to the Draft SEIR):

> "Project level environmental documents shall analyze construction and maintenance GHG emissions."

Paragraph 7. The Draft SEIR includes baseline emissions for greenhouse gas (GHG) and criteria pollutants in tables 3-3 to 3-5, and 3-11. The Draft SEIR incorporates the conformity analysis by reference. The budgets included in the conformity analysis are from the seven State Implementation Plans developed for criteria pollutants in Kern and are based on observed emissions inventories and air quality monitoring data. There is currently no monitoring data network for GHG. The air basin for GHG is global, so a global monitoring network and emissions inventory would be required to accurately assess the impacts of GHG.

Paragraph 8. While analysis of per capita GHG emissions is a CARB Regional Targets Advisory Committee recommendation for passenger vehicle emission, no other regulatory agency requires this analysis at this time, nor is it available. In addition, the GHG analysis includes emissions from heavy duty trucks which are not a part of the SB 375 per capita requirement. Kern COG will comply with SB 375 targets when they become available; this discussion will be included in 2014 RTP in keeping with the established timeframe for SB 375.

Paragraph 9. The GHG analysis was prepared as part of the cumulative analysis, as provided in Table 3-12 of the Draft SEIR and reflected in the projects from Table 4-1 of the RTP. The air quality model used to predict emissions rates of the criteria pollutants (EMFAC) is capable of modeling the emissions of CO_2, and Kern COG analyzed CO_2 emissions resulting from the 2011 RTP. Even though the total VMT increased, the 2011 RTP results in a reduction of CO_2 emissions and would represent an improvement over the No Project Alternative as shown in Table 3-12 of the Draft SEIR. The improvement in operations compared to the No Build Alternative, particularly higher speed and reduced vehicle hours traveled (VHT), has a beneficial cumulative impact on CO_2 emissions because of improved traffic flow, resulting in more efficient vehicle operation, which is consistent with the results for the analysis of the other criteria pollutants. The 2011 RTP would result in a positive cumulative effect on the reduction of CO_2 levels and would not require mitigation.

Paragraph 10. Significance threshold for passenger vehicle related GHG emissions are currently being established by CARB as part of the SB 375 process, and should be set by September 30, 2010 which is beyond the required date to update the Kern RTP. The significance threshold for GHG emissions will be discussed in Kern COG's 2014 document. The California Air Resources Board (CARB) Scoping Plan indicates the "possible" impacts of land use and transportation policies, referencing a 2008 U.C. Berkeley study that reviewed land use/transportation modeling studies from California, other states, and Europe. That study found a range of between 0.4 and 7.7 percent reduction in vehicle miles traveled (VMT) resulting from a combination of land use and enhanced transit policies compared to "business as usual". The Scoping Plan indicated that the range of VMT reductions resulted in a 4 percent median value. The Scoping Plan specifically states, "This value should not be interpreted as the final estimate of the benefits of this measure….The benefit will be determined as an outcome of SB 375". Kern COG is currently developing plans and policies to address SB 375 requirements, which will be incorporated as part of the 2014 RTP.

Paragraph 11. See discussion provided in response to Paragraph 9. Climate change impacts were discussed within the 2011 RTP and its Draft SEIR as well as the Conformity

determination. Currently, metropolitan Bakersfield's transit provider (Golden Empire Transit or GET) is preparing a Long Range Transit Study, which will be implemented over the next 5 to 20 years and will strongly influence where and how travel occurs. From a cumulative perspective, the impact of the RTP on where and how travel occurs is reflected in the difference between the Build and No Build Alternatives as provided in Table 3-12 of the Draft SEIR. Also in the Draft SEIR is a lengthy list of feasible mitigation measures, though individual measures will be determined on a project by project basis. Note, starting on page 3-91 of the Draft SEIR, the mitigation measures provided for Impacts 3.5.1 and 3.5.2. However, some mitigation measures cannot be quantified because the necessary tools to do so are not currently available. The California Air Resources Board (CARB) is in the process of identifying a qualitative methodology to assess beneficial impacts of the various listed mitigation measures as part of the SB 375 process. Still others require assessment at the individual project level. Kern COG cannot quantify what the individual impacts will be to the complete RTP Program of Projects because it contains a full array of alternative mode projects. The Transportation Control Measures action element beginning on p. 4-65 of the RTP includes a detailed discussion of control measures that have been considered or are under consideration in the region. Based on cumulative analysis, Kern County is meeting its required federal air quality standards. Climate change standards for passenger vehicles have yet to be set by CARB. Kern COG has analyzed Build and No Build alternatives. The Plan reduces GHG when compared to the No Build alternative. Additional mitigation measures, as they are implemented, will help the region exceed analyzed benefits.

Paragraph 12. Kern County must expand road capacity in order to provide for improved transit systems, as well as bicyclists, and other non-motorized modes, not just to provide capacity for single-occupant vehicles (SOVs). An update to the Kern County Bicycle Plan is currently under preparation. In addition, initial modeling conducted by Kern COG indicates that a dedicated bus lane for Bus Rapid Transit (BRT) would only carry 430 of the 600 daily boardings needed by 2035 to meet the 20 percent operating farebox subsidy requirements (not including right-of-way and equipment costs for the dedicated Bus/High Occupancy Vehicle (HOV) lane. Opportunities may arise to optimize the system and increase ridership in the future, possibly adding parking costs, alternative land uses, and other strategies as part of Kern COG's Metropolitan Bakersfield Long Range Transit Study scheduled for completion in 2012. For now, an enhanced transit option that reduces VMT and vehicle trips does not appear to be financially feasible without a new transit operating funding source.

Paragraph 13. See response provided for Paragraph 9. Kern COG has quantified GHG emissions for the region as provided on page 3-90 of the Draft SEIR. Kern COG does have experience in modeling sprawl impacts and along with the other seven San Joaquin Valley COGS is reviewing a wide variety of tools to estimate sprawl impacts. An appropriate tool will be selected for use in the 2014 RTP. Nevertheless, the 2011 RTP incorporates principles from the Kern Regional Blueprint that were developed based on the agency's modeling of sprawl impacts and extensive public input. Tools used included UPLAN and EMFAC and spreadsheet-based methodologies.

Paragraph 14. The Climate Change Section 3.5 of the Draft SEIR does identify feasible mitigation strategies, some of which include those listed in the California Clean Energy

Committee's comment letter. However, some strategies are not appropriate for the Kern region because of its unique mix of urban and rural forms.

Paragraph 15. See response provided for Paragraph 13.

Paragraph 16. As described in the response to Paragraph 9, the Build / No Build analysis is incorporated. The methodology used includes a transportation model with a feedback loop that includes the mode choice step to simulate induced traffic demand for each scenario analyzed. Page 4-69 of the RTP includes a list of TCMs considered by projects in the Metropolitan Bakersfield area. Some projects have considered increased parking cost for the central business district locations as an option. Other TCMs considered include carpooling, flextime, transit subsidies, park and rides, increased funding for transit and high occupancy vehicle lanes. At least one major transportation facility includes room to accommodate an HOV lane that could become part of a future congestion pricing study.

Page 4-110 of the RTP includes a new requirement for a Deficiency Plans or Corridor System Management Plan (CSMP) as part of the Congestion Management Program. The CSMP is required to look at: multimodal analysis, corridor analysis, multimodal circulation plans, funding mitigation, and congestion pricing in corridors that are currently worse than Level of Service E.

Paragraph 17. See previous comment. In 1997, Kern COG completed the Metropolitan Bakersfield Major Transportation Investment Strategy (MTIS). The MTIS was jointly conducted by the following agencies:

- City of Bakersfield
- County of Kern
- Golden Empire Transit
- Kern CO;
- Caltrans, District 6, and
- San Joaquin Valley Unified Air Pollution Control District.

The strategy developed by the participating agencies contained eight components, including land use. The land use planning component encourages mixed-use, infill, and other balanced land development to minimize concomitant vehicular traffic increases. Developer incentives for mixed-use and infill have been instituted. Large developments proposed as an amendment to the metropolitan Bakersfield General Plan trigger the requirement for a traffic impact analysis that uses the Kern COG regional transportation model. Developments with a balanced mix of residential income housing and commercial/industrial will show less of an impact than strictly residential development, thereby reducing the traffic impact fee that a development must pay.

To encourage infill development, the City of Bakersfield and the County of Kern have jointly adopted a two-tiered traffic impact fee for metropolitan Bakersfield. The fee is half of the $12,000 per house fee in the "core area" of Bakersfield. The core area is primarily the older "built out" portions of the community that have the infrastructure in place. The logic behind the lower core area fee is that housing in these areas should not have to pay as high a fee because the transportation infrastructure is already in place. The result is a

fee structure that promotes infill and increased densities in areas with readily available bus transit and pedestrian access.

The MTIS also looked at light and heavy rail. The study indicated that even with an optimistic growth rate, light rail would not be viable in metropolitan Bakersfield before 2014. However, as the land use program is implemented, densities could eventually provide enough infill to support such a system. In addition, the MTIS developed a sketch plan for a heavy commuter rail network connecting Metro Bakersfield to outlying communities. The development of a feeder rail network using existing spur lines in support of a high-speed rail connection to Los Angeles and San Francisco is being studied now that funding has been be approved for the proposed high-speed rail system. The viability of either system is dependent on a pattern of development that is much denser than is being implemented currently. Land use development patterns should include dense, pedestrian-oriented future transit hubs that could support viable alternatives to single occupancy vehicle travel. The MTIS concluded that, for the near term, multimodal transportation investment should focus on increasing and expanding the existing bus service. This strategy has the added potential of one day providing a feeder network that would increase the viability of other modes such as pedestrian, bike and rail service.

In 2009 as part of the RTP update Kern COG analyzed an updated version of the MTIS light rail scenario substituting the rail corridor with a Bus Rapid Transit (BRT) System. Section 4.2.3 of the Draft SEIR summarizes the analysis. The corridor still lacked the ridership necessary to recover the required farebox ratio to viably operate the system. GET is working on a Long Range Transit Study update to the MTIS and will look at alternatives to improve the viability of BRT and Light Rail.

Paragraph 18. The 2011 RTP provides for multimodal projects, rather than simply a road improvement program. Kern COG's transportation modeling process uses all of Kern communities' general plans. Such strategies as parking pricing or shifting funding to other modes such as transit, bicycling and walking will be considered. Kern COG has modeled parking pricing along with a mix of transit. See the response to paragraphs 16 and 17 related to congestion pricing and multimodal analysis. In 2008 Kern COG adopted the Kern Regional Blueprint. The final report included a residential energy consumption analysis in the year 2050. The 2011 RTP now includes two rail goods movement infrastructure projects. Shipping goods by rail is 10 times more energy efficient than shipping by truck. Over the next few years Kern COG will be assessing all relevant strategies for reducing energy consumption and GHG emissions; these will be modeled and results will be incorporated as part of the 2014 RTP. However, it seems likely that congestion pricing would need to be implemented on a national level because of our high percentage of through-County trips (over 30% of our trips are pass-through).

Paragraph 19. While the 2011 SEIR Notice of Preparation did not indicate expected Energy and Energy Conservation impacts that would result from the 2011 RTP, potential impacts and mitigation measures to fully address such impacts will be incorporated in the Final SEIR to ensure compliance with Appendix F of CEQA Guidelines. Mitigation measures are already included in the Climate Change sector of the Draft SEIR that would also address energy conservation impacts. Energy impacts associated with the 2011 RTP are not expected to be greater than other project alternatives analyzed in the Draft

SEIR. Remaining significant effects are not expected and overriding considerations and findings will not be required.

Kern COG's Environmental Justice (EJ) analysis looked at the impact of urban transit service expenditures on EJ neighborhoods. The result was an indication that the current transit expenditure distribution aided EJ neighborhoods.

Paragraph 20. See response to Paragraph 4. The transportation model analysis for GHG emissions incorporates speeds that are input to EMFAC, which factors into estimates of projected GHG emissions. The majority of 55+ mph highway lane miles are under jurisdiction of the State of California, which would require statewide legislation to change. The majority of major arterials in Kern County under local jurisdiction is set at 45 mph or lower. For conformity purposes, 45 mph is the optimum speed. If speeds were to be lowered, problems with conformity would be encountered, impacting both CO and CO_2. In addition, Kern COG has dedicated funding to speed limit enforcement and traffic calming features.

Paragraph 21. The 2011 RTP provides a multimodal Program of Projects as identified in Table 4-1. Follow up analysis will occur with individual projects as local agencies move forward, and environmentally assess individual projects on a project by project basis. Many of the RTP's capacity increasing projects in rural areas are safety-related projects, rather than congestion- relieving. The same is true with maintenance and rehabilitation projects.

Paragraph 22. See response to Paragraph 4. Currently, CEQA does not require that the impacts of climate change on the transportation infrastructure be considered. However, mitigation measures for maintenance and rehabilitation projects will be implemented by local agencies and Caltrans as those projects are undertaken. Roadbeds will be improved to current standards, which are intended to address the flooding and erosion potential over the life of a project. Typically, projects have a 20 – 30 year life cycle.

Paragraph 23. Regarding the diversion of funds to alternative transportations creating unacceptable delays, congestion and air quality impacts, the analysis mentioned in paragraph 17 above shows that Metropolitan Bakersfield lacks the density to affordably run a Bus Rapid Transit or Light Rail System. Kern COG is instituting with this revision to the RTP, new requirements for looking at congestion pricing in currently congested areas as part of the Congestion Management Program, and a Long Range Transit Study is underway to develop a more viable alternative transportation system that could include parking pricing and other strategies including managed lanes. Kern COG has performed extensive system level analysis of Environmental Justice areas using the Caltrans Smart Mobility Framework. The current analysis demonstrates that transportation expenditures are benefitting environmental justice areas for both highway and transit expenditures. Increased energy costs are not localized and there for not included in the Environmental Justice analysis stratified by place type.

FROM: Bob Wren, Deputy Director of Public Works, City of Wasco

DATED: June 2, 2010

RESPONSE #5: There are two proposed sites for the Heavy Maintenance Facility. One is in Wasco and the other in Shafter. You can review the proposals on Kern COGs website at http://kerncog.org/cms/transportation/hsr. As for the status, both sites have been selected for the short-list. Final selection is scheduled for July 2011.

STATE OF CALIFORNIA
GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH
STATE CLEARINGHOUSE AND PLANNING UNIT

ARNOLD SCHWARZENEGGER
GOVERNOR

CYNTHIA BRYANT
DIRECTOR

June 16, 2010

RECEIVED
JUN 18 2010
KERN COUNCIL
OF GOVERNMENTS

Ms. Marilyn Beardslee
Kern Council of Governments
1401 19th Street, Suite 300
Bakersfield, CA 93301

Subject: 2011 Kern COG Regional Transportation Plan
SCH#: 2006111119

Dear Ms. Marilyn Beardslee:

The State Clearinghouse submitted the above named Draft EIR to selected state agencies for review. The review period closed on June 14, 2010, and no state agencies submitted comments by that date. This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. 1

Please call the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process. If you have a question about the above-named project, please refer to the ten-digit State Clearinghouse number when contacting this office.

Sincerely,

Scott Morgan
Acting Director, State Clearinghouse

1400 10th Street P.O. Box 3044 Sacramento, California 95812-3044
(916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

Document Details Report
State Clearinghouse Data Base

SCH# 2006111119
Project Title 2011 Kern COG Regional Transportation Plan
Lead Agency Kern Council of Governments

Type EIR Draft EIR
Description Preparation and approval of the 2011 Kern COG Regional Transportation Plan (RTP).

Lead Agency Contact

Name Ms. Marilyn Beardslee
Agency Kern Council of Governments
Phone (661) 861-2191 **Fax**
email
Address 1401 19th Street, Suite 300
City Bakersfield **State** CA **Zip** 93301

Project Location

County Kern
City Bakersfield
Region
Lat / Long
Cross Streets
Parcel No.
Township **Range** **Section** **Base**

Proximity to:

Highways
Airports
Railways
Waterways
Schools
Land Use Various

Project Issues Agricultural Land; Air Quality; Archaeologic-Historic; Drainage/Absorption; Flood Plain/Flooding; Geologic/Seismic; Minerals; Noise; Population/Housing Balance; Public Services; Recreation/Parks; Soil Erosion/Compaction/Grading; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Wetland/Riparian; Wildlife; Growth Inducing; Landuse; Cumulative Effects; Aesthetic/Visual

Reviewing Agencies Resources Agency; Department of Conservation; Department of Fish and Game, Region 4; Office of Historic Preservation; Department of Parks and Recreation; Department of Water Resources; California Highway Patrol; Caltrans, District 6; Air Resources Board, Transportation Projects; Regional Water Quality Control Bd., Region 5 (Fresno); Department of Toxic Substances Control; Native American Heritage Commission; Public Utilities Commission; State Lands Commission; Caltrans, District 3

Date Received 04/30/2010 **Start of Review** 04/30/2010 **End of Review** 06/14/2010

Note: Blanks in data fields result from insufficient information provided by lead agency.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

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

Subject: U.S. EPA Comments on the Kern Council of Governments (KCOG) Regional Transportation Plan and Draft Environmental Impact Report

2 – Entire Letter

Dear Ms. Beardslee:

The U.S. Environmental Protection Agency (EPA) appreciates the opportunity to provide comments on the Kern Council of Governments (KCOG) 2011 Draft Regional Transportation Plan (RTP) and Draft Environmental Impact Report (DEIR). EPA is committed to the goal of incorporating environmental considerations early in the transportation planning process. Early coordination results in greater opportunities to avoid sensitive resources and minimize impacts associated with future transportation projects.

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) directs metropolitan planning organizations (MPOs) to consult with resource agencies while developing long-range transportation plans. It also requires such plans to discuss potential environmental mitigation activities and potential locations for these activities to restore and maintain environmental functions that could be affected by the plan. While EPA did not complete a comprehensive review of the KCOG RTP, we provide the following comments in support of compliance with these requirements. While we understand some of the provided recommendations below may not be able to be incorporated into this RTP revision, we hope that the concepts and principles identified can be incorporated into the next RTP revision.

Delineate Robust Measures to Improve Air Quality through Travel Efficiency

Air quality in the San Joaquin Valley is among the poorest in the country, causing health and environmental impacts for its residents and costs to its economy totaling approximately $1600 per capita annually. The valley's geography and meteorology traps pollutants, so special attention must be given to reducing the amount of pollutants emitted. Transportation within the valley contributes a significant portion of these pollutants, and conversely reduction of vehicle travel can provide reductions for all pollutants. Reducing emissions from transportation is necessary to improving the valley's air quality. While improvements in fuel efficiency and

vehicle technology will contribute to a reduction in emissions, substantial focus on and investment in travel efficiency measures (e.g. smart growth and transportation demand management (TDM)) is also needed to further reduce emissions in the San Joaquin Valley.

Use the RTP Process to Spur Transportation Efficient Growth That Accomplishes Multiple Objectives

A regional transportation planning process provides an opportunity to focus growth and activity where it most benefits the region. Compact development built in infill locations shortens trip distances; transit-oriented development leads to a greater share of transit use; mixing of uses accomplishes both and also creates opportunities for active transportation modes. Such development patterns, and the transportation patterns they help create, in turn can create environmental and livability benefits. These concepts and others are included in Caltrans' recently completed *Smart Mobility 2010: A Call to Action for the New Decade.* In particular, EPA would like to call attention to its discussion of performance measures aimed at quantifying the benefits of integrated planning:

> Transportation performance measures forecast, evaluate, and monitor the degree to which the transportation system accomplishes adopted public goals and mobility objectives. Smart Mobility Performance Measures demonstrate the relationship between integrated transportation and land use decisions and the consequent effects on the full range of economic, social, and environmental conditions. (p. 50)

As detailed in the document, EPA recommends incorporation of carefully chosen performance measures to inform and guide planning efforts.

EPA, the US Department of Housing and Urban Development (HUD) and the US Department of Transportation (DOT) recently joined in a partnership to support measures to improve livability and sustainability. We encourage you to consider the principles identified through this partnership when working to integrate the regional blueprint concept into regional planning. More information on this partnership, including grant opportunities, can be found at http://www.epa.gov/smartgrowth/partnership/. Programs offered by the partnership, including funding opportunities, can be found at http://www.epa.gov/smartgrowth/pdf/2010_0506_leveraging_partnership.pdf.

Clarify in the RTP How the Ongoing Regional Blueprint Effort Influenced Any Current Design and Route Network Location Decisions.

EPA recognizes that San Joaquin Valley MPOs intend to apply the ongoing regional blueprint process to identify preferred growth scenarios for the future which will serve as the foundation for determining a Sustainable Community Strategy. EPA recommends that, from a regional perspective, the RTP identify how proposed transportation projects have been planned to (1) more efficiently use existing infrastructure, for example by incorporating intelligent transportation systems or improving transit service, rather than adding new infrastructure; (2) satisfy regional residents' need for efficient access to goods and services in the way that causes the least environmental and social harm; and (3) avoid and minimize harm to high quality resources and habitat. The RTP should also identify what design and route network location

A significant fraction of the built environment that will exist in the area affected by this RTP has yet to be built. Thus, significant opportunity exists to make substantial changes to land use development patterns. Because land use has significant direct influence on factors such as mode choice and average trip distance, and therefore indirect influence on factors such as air quality and greenhouse gas emissions, opportunity exists for significant change from current trends. EPA recommends including a discussion of estimates of the range of possibility with respect to these factors, and a discussion of the factors limiting these possibilities (e.g. funding, institutions).

EPA recognizes that MPOs do not have direct land use control. They can, however, facilitate local jurisdictions in the region, coordinating and building consensus through blueprint planning. A number of incentive programs are available to help fund such coordination (see attachment). Further, an MPO can use its role in transportation network planning to influence growth.

EPA recommends including discussion of both near-term transportation demand management strategies and more aggressive potential future solutions. While we recognize there may not be an opportunity to include a comprehensive discussion and analysis of these measures in this RTP update, we recommend expanding this discussion as feasible in this RTP with an eye toward the next RTP cycle. We recommend such a discussion focus primarily on opportunities and secondarily on constraints.

Discuss Impacts to Critical Habitat Areas and Connect It to a Broader Regional Mitigation Strategy in the RTP.

EPA strongly recommends avoiding biologically sensitive habitats when planning a regional transportation network. Where applicable open space plans, conservation areas, mitigation banks, conservation plans (such as Habitat Conservation Plans (HCPs) and Natural Community Conservation Planning programs), and high value resource areas should be identified and avoided at the regional transportation planning phase, rather than waiting until project implementation. Choices involving both roadway network placement and land use are decided or highly influenced by the regional transportation planning process and can have large implications for biologically sensitive areas.

The following are EPA's recommendations for biological and sensitive habitat mitigation:

- Use resource data to inform transportation decision-making.
- Use watershed, conservation, and recovery plans to identify important environmental considerations for the region, such as critical wildlife corridors, the most important areas to protect for sensitive species, and areas with a high concentration of resources.
- Give conservation plans as much weight as General Plans when planning transportation investments.

- Incorporate concepts such as 100 to 200 foot buffers for stream corridors, and identification and improvement of priority culverts that currently restrict wildlife corridors and natural processes of stream and river systems.
- Use parcel maps to identify larger, undivided parcels for ease of acquisition and preservation, and designate areas as potential future mitigation sites.
- Consider the resource, "Eco-logical: An Ecosystem Approach to Developing Infrastructure Projects" (2006)[1] which encourages Federal, State, Tribal and Local partners involved in infrastructure planning, design, review, and construction to use flexibility in regulatory processes. Specifically, Eco-Logical puts forth the conceptual groundwork for integrating plans across agency boundaries, and endorses ecosystem-based mitigation - an innovative method of mitigating infrastructure impacts that cannot be avoided.

The Regional Mitigation Strategy contained in the RTP should also establish the foundation for innovative regional mitigation solutions:

- Identify financial mechanisms to fund mitigation, such as development fees, sales tax, or the use of funds from alternative methods to identify and protect critical resource areas.
- Establish conservation easements that connect to and expand existing conservation areas.
- Describe locally-developed measures such as county/city designation of open-space, measures requiring development set-backs near streams, etc.

Describe the Use of Available Data to Inform Regional Transportation Planning Decisions.

SAFETEA-LU directs MPOs to compare transportation plans with other plans, maps, and data of inventories of natural or historic resources, if available. The RTP should therefore include a discussion of other data, plans, or maps that may be useful to inform long-range transportation planning. EPA recommends that the RTP specifically describe how the proposed transportation network has been designed to avoid resources identified in data sources such as those identified below:

- U.S. Fish & Wildlife Service species recovery plans
- USDA Natural Resources Conservation Service wetland data
- Nature Conservancy data and regional planning documents
- California Department of Fish and Game Natural Diversity Database
- Local non-profit and land trust group information

[1] Eco-logical is available on-line at: http://www.environment.fhwa.dot.gov/ecological/eco_index.asp. Information on pilots using Eco-logical principals is available on-line at: http://www.trb.org/StrategicHighwayResearchProgram2SHRP2/Public/Pages/capacitypilottests_334.aspx .

EPA values the opportunity to be involved in the regional transportation planning process. When the final RTP and EIR are available, please send a copy of each to the address above (mail code CED-2). If you have any questions about our comments, please contact me at 415-947-4121 or ganson.chris@epa.gov.

Sincerely,

Chris Ganson
Environmental Review Office

Enclosure: Leveraging the Partnership: DOT, HUD, and EPA Programs for Sustainable Communities

cc: Garth Hopkins, Caltrans Headquarters
Christine Cox-Kovacevich, Caltrans Central Region
Aimee Kratovil, Federal Highway Administration
Eric Eidlin, Federal Transit Administration
Roberta Gerson, US Fish and Wildlife Service

STATE OF CALIFORNIA – NATURAL RESOURCES AGENCY ARNOLD SCHWARZENEGGER, *Governor*

CALIFORNIA ENERGY COMMISSION
1516 NINTH STREET
SACRAMENTO, CA 95814-5512
www.energy.ca.gov

May 13, 2010

Ms. Marilyn Beardslee
Kern Council of Governments
1401 19th Street, Suite 300
Bakersfield, CA 93301

Dear Ms. Beardslee:

The California Energy Commission has received the Kern Council of Governments' Supplemental/Subsequent EIR titled 2011 Kern COG Regional Transportation Plan, SCH 2006111110 that was submitted on 4/30/2010 for comments due by 6/14/2010. After careful review, the Energy Commission has found the following:

We would like to assist in reducing the energy usage involved in your project. Please refer to the enclosed Appendix F of the California Environmental Quality Act for how to achieve energy conservation. 3

In addition, the Energy Commission's *Energy Aware Planning Guide* is also available as a tool to assist in your land use planning. For further information on how to utilize this guide, please visit www.energy.ca.gov/energy_aware_guide/index.html.

Thank you for providing us the opportunity to review/comment on your project. We hope that our comments will be helpful in your environmental review process.

If you have any further questions, please call Gigi Tien at (916) 651-0566.

Sincerely,

Bill Pfanner

BILL PFANNER
Supervisor, Local Energy & Land Use Assistance Unit
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California Energy Commission
1516 Ninth Street, MS 23
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Enclosure

Appendix F
ENERGY CONSERVATION

I. Introduction

The goal of conserving energy implies the wise and efficient use of energy. The means of achieving this goal include:

(1) decreasing overall per capita energy consumption,
(2) decreasing reliance on natural gas and oil, and
(3) increasing reliance on renewable energy sources.

In order to assure that energy implications are considered in project decisions, the California Environmental Quality Act 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.

Energy conservation implies that a project's cost effectiveness be reviewed not only in dollars, but also in terms of energy requirements. For many projects, lifetime costs may be determined more by energy efficiency than by initial dollar costs.

II. EIR Contents

Potentially significant energy implications of a project should be considered in an EIR. The following list of energy impact possibilities and potential conservation measures is designed to assist in the preparation of an EIR. In many instances, specific items may not apply or additional items may be needed.

A. Project Description may include the following items:
   1. Energy consuming equipment and processes which will be used during construction, operation, and/or removal of the project. If appropriate, this discussion should consider the energy intensiveness of materials and equipment required for the project.
   2. Total energy requirements of the project by fuel type and end use.
   3. Energy conservation equipment and design features.
   4. Initial and life-cycle energy costs or supplies.
   5. Total estimated daily trips to be generated by the project and the additional energy consumed per trip by mode.

B. Environmental Setting may include existing energy supplies and energy use patterns in the region and locality.

C. Environmental Impacts may include:
   1. The project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project's life cycle including construction, operation, maintenance and/or removal. If appropriate, the energy intensiveness of materials may be discussed.
   2. The effects of the project on local and regional energy supplies and on requirements for additional capacity.
   3. The effects of the project on peak and base period demands for electricity and other forms of energy.
   4. The degree to which the project complies with existing energy standards.
   5. The effects of the project on energy resources.
   6. The project's projected transportation energy use requirements and its overall use of efficient transportation alternatives.

D. Mitigation Measures may include:
   1. Potential measures to reduce wasteful, inefficient and unnecessary consumption of energy during construction, operation, maintenance and/or removal. The discussion should explain why certain measures were incorporated in the project and why other measures were dismissed.
   2. The potential of siting, orientation, and design to minimize energy consumption, including transportation energy.
   3. The potential for reducing peak energy demand.
   4. Alternate fuels (particularly renewable ones) or energy systems.
   5. Energy conservation which could result from recycling efforts.

E. Alternatives should be compared in terms of overall energy consumption and in terms of reducing wasteful, inefficient and unnecessary consumption of energy.

F. Unavoidable Adverse Effects may include wasteful, inefficient and unnecessary consumption of energy during the project construction, operation, maintenance and/or removal that cannot be feasibly mitigated.

G. Irreversible Commitment of Resources may include a discussion of how the project preempts future energy development or future energy conservation.

H. Short-Term Gains versus Long-Term Impacts can be compared by calculating the energy costs over the lifetime of the project.

I. Growth Inducing Effects may include the estimated energy consumption of growth induced by the project.

California Clean Energy Committee

June 10, 2010

Ms. Marilyn Beardslee, Project Administrator
Kern Council of Governments
1401 – 19th Street, Suite 300
Bakersfield, California 93301

Re: Comments on the Draft Environmental Impact Report
Kern COG 2011 Regional Transportation Plan

4 – Entire Letter

Dear Ms. Beardslee:

This letter will constitute comments by the California Clean Energy Committee regarding the Kern COG 2011 Regional Transportation Plan draft programmatic environmental impact report (EIR). P1

The Committee is a California non-profit corporation headquartered in Santa Barbara which seeks to promote energy conservation, greenhouse gas reduction, and the development of clean-energy resources in California. It actively supports the application of the California Environmental Quality Act (CEQA) to energy conservation and to related impacts. P2

Seventy-six percent of participants in the Kern COG Blueprint agreed or strongly agreed that alternative transportation should be expanded. Thirty-nine percent favored major policy changes to protect the environment and natural resources. P3

Over 40 individuals in Kern County have joined the California Clean Energy Committee's campaigns. Eighteen individuals have joined the campaign to request that the environmental impact report on the Kern COG regional transportation plan include increased energy conservation and sustainable transportation. P4

All notices regarding this project are requested to be sent to 1224 North Ontare Rd., Santa Barbara, California 93105-1940. Please feel free to contact the undersigned for additional information. P5

With respect to GHG impacts, the EIR should analyze the environmental loads emitted from the project life cycle. The life cycle includes manufacturing of construction materials, project construction, maintenance, and repair. Building a lane-mile of roadway can release as much as 2300 tons of CO2, and long-term maintenance and reconstruction activities can release as much as 5200 tons of CO2 per lane mile. In addition, mainten- P6

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ance and construction activities also create substantial congestion which can last for years resulting reduced fuel efficiency and increased emissions of CO2 and criteria pollutants.

The impacts of the project on air quality and GHG emissions should be compared to current emissions of CO2 and criteria pollutants including ROG, NOx, CO, PM2.5, and PM10. However, current emissions have not been quantified. The budget thresholds do not constitute the baseline. P7

Population should be factored out of GHG data by calculating per capita emissions. The comparison of two 2035 scenarios obscures the fact that increased per capita emissions are a significant impact. Per capita emissions should be disclosed in the document and quantified for each alternative. P8

The GHG analysis also should be a cumulative analysis including either a list of projects creating related impacts or a summary of impacts from an adopted planning document. P9

A significance threshold for GHG emissions should be adopted, and the threshold should be consistent with the Scoping Plan adopted by the California Air Resources Board (CARB). The CARB Scoping Plan calls for a 4% per year reduction in VMT per capita. P10

Impact 3.5.1 in the EIR concludes that the 2011 RTP may cause climate change due to its influence on where and how travel occurs. The impact of the RTP on where and how travel occurs should be quantified based on scientific evidence. The proposed mitigation of the impact should also be quantified. P11

Making additional road capacity available to commuters can result in the over-use of roadways and can diminish the use of more environmentally-sustainable modes such as transit, cycling, and walking. The negative impact on transit ridership of providing increased roadway capacity should be analyzed. P12

The existing greenhouse gas emissions of the regional system should be quantified using an appropriate model which should be evaluated and justified. Kern COG has experience for modeling sprawl impacts based on the Kern Blueprint process. There are a variety of projection tools available. INDEX is a current and endorsed GHG emissions modeling technology which allows for the computation of greenhouse gas emissions under a variety of transportation system designs and population scenarios and is able to quantify how proposed policies affect GHG emissions. INDEX allows for modeling of GHG mitigation. P13

The EIR should adopt feasible mitigation for the impact on climate change that is within its power to adopt or promote in the region. Mitigation can include the purchase of carbon credits, increased funding for transit service, congestion pricing, increased funding for Amtrak, biking and pedestrian infrastructure, subsidies for sustainable energy P14

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projects, employee transit incentives, parking pricing, cordon pricing, gas taxes, registration fees, public education, growth boundaries, transit-oriented development opportunities, incentives for local agencies, complete streets, lower transit fares, new transit service, car-sharing, SOV reduction programs, monthly transit passes, public support for electric vehicles, on-line ride matching, eco-driving training, freeway management, modal diversion, etc.

The EIR concludes that the RTP will have a cumulatively considerable impact on land use. The EIR should model the impact on sprawl and evaluate mitigation through mode shifts and similar smart growth tools. P15

The EIR should evaluate induced traffic. Roadway capacity expansion can impact individual decisions about when, where and how to travel. Increasing roadway capacity can reduce automobile travel times and thus enhance the attractiveness of highway use. Reducing travel times can lead individuals to travel to more remote destinations thus increasing VMT and related impacts. P16

Induced traffic does not include traffic increases that result from population increases or economic growth. However, reducing the cost of travel in terms of the time required can lead to an increase in the number of trips individuals take. Induced traffic connected with capacity expansion can be mitigated by using tolls or congestion pricing. These impacts should be evaluated and mitigated. P17

The RTP would also encourage driving by providing a subsidy to individuals who elect to travel by SOV since individuals pay only part of the cost of travel by SOV through user fees such as gas taxes, vehicle costs, private insurance, and registration fees. The impacts on the physical environment of subsidies for SOV travel could be mitigated by congestion pricing or by shifting funding to more sustainable modes such as transit, cycling, and walking. P18

Energy consumption and energy efficiency should be quantified and evaluated. The environmental setting should discuss the energy setting of the project including the uncertainties of crude oil supplies, price volatility, and the related impacts on transit ridership and on low income populations. Focusing public transportation funding on SOVs will not provide a cost-effective transportation mode for low income populations during periods of volatile oil prices. Overall use of energy and energy efficient alternatives should be evaluated scientifically. Direct and indirect project energy consumption should be considered. P19

The EIR should consider the increased emissions that result from high speed vehicle operation where traffic congestion is reduced. NOx emissions, VOC emissions, CO_2 emissions and energy consumption per vehicle mile increase considerably at speeds over P20

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45 mph. For example, the purpose of the now-repealed 55 mile-per-hour speed limit was energy conservation. Where freeway capacity is increased and congestion is reduced, vehicle speeds can rise considerably. At higher speeds fuel economy degrades rapidly. This is a potentially significant adverse impact that should be modeled as a part of the air quality, GHG and energy impact sections. Mitigation could include funding devoted to strict enforcement of speed limits, traffic calming measures, and programs to encourage local agencies to adopted lower speed limits.

Transportation decisions have considerable implications for public health including fatalities, injuries, and concentrated ground-level exhaust emissions particularly from diesel vehicles. Over 33,000 people died in traffic crashes in 2009 and many more suffered injury. Transportation planning decisions have an impact on physical inactivity and rising asthma and obesity rates in both adults and children. By focusing transportation funding on roadway capacity as opposed to sustainable transportation policies, the RTP would have an adverse impact on public health that should be evaluated in the EIR. Sustainable transportation alternatives such as walking, bicycling and transit use are convenient and cost-effective ways to introduce more physical activity into daily life. The EIR should quantify the project impacts on human health. P21

The EIR should consider the impacts of climate change on the transportation infrastructure in Kern County. P22

With respect to the agency's alternatives analysis, the VMT Reduction Alternative concludes that the alternative is not feasible because the diversion of the limited funds available to alternative transportation would lead to unacceptable delay, congestion and air quality impacts. There are cost-effective tools that both reduce congestion and provide personal mobility. The impacts of allowing an unlimited increase overall VMT are equally unacceptable for many reasons including the economic impacts on low income populations. The reduced VMT alternative should consider the policies discussed herein such as congestion pricing which can generate revenues for transportation services. P23

Respectfully submitted,

Eugene S. Wilson

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Ms. Marilyn Beardslee
June 11, 2010
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APPENDICES

Appendix 1: San Joaquin Valley Air Pollution Control District. Air Quality Guidelines for General Plans (June, 2005)

Appendix 2: San Joaquin Valley Air Pollution Control District. Final Staff Report: Addressing Greenhous Gas Emissions Impacts Under the California Environmental Quality Act (December, 2009).

Appendix 3: California Air Pollution Control Officers Association. CEQA and Climate Change (January 2008).

Appendix 4: City of Redwood City, New General Plan Draft Environmental Impact Report (May, 2010).

Appendix 5: Caltrans. Energy and Transportation Systems (July, 1983).

Appendix 6: Kwngho Park et al. Quantitative Assessment of Environmental Impacts on Life Cycle of Highways, Journal of Construction Engineering and Management (January, 2003).

Appendix 7: Williams-Derry, Clark. Increases in Greenhouse-Gas Emissions from Highway Widening Projects. (October, 2007).

Appendix 8: Litman, R. Generated Traffic and Induced Travel: Implications for Transport Planning (March, 2010).

Appendix 9: U.S. EPA. URBAN Sprawl Modeling, Air Quality Monitoring and Risk Communication; the Northeast Ohio Project (November, 2002).

Appendix 10: Parsons Brinckerhoff Quade & Douglas. Land Use Impacts of Transportation: A Guidebook (October 1998).

Appendix 11: R. Ewing, R. Pendall, D. Chen, Measuring Sprawl and Its Impact.

Appendix 12: Centers for Disease Control and Prevention. CDC Recommendations for Improving Health through Transportation Policy

Appendix 13: American Public Health Association, The Hidden Health Cost of Transportation (May, 2010).

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Appendix 14: U.S. Congress, Office of Technology Assessment, Saving Energy in U.S. Transportation, (Washington, DC: U.S. Government Printing Office, July 1994).

Appendix 15: California Air Resources Board, Climate Change Scoping Plan (December 2008).

Appendix 16: California Natural Resources Agency, 2009 California Climate Adaptation Strategy (December 2009).

Appendix 17: Kern Council of Governments, Kern Regional Blueprint Program; Final Report (December 2008).

Appendix 18: Urban Land Institute, Moving Cooler (July 2009).

Appendix 19: National Research Council, Transportation Research Board, Expanding Metropolitan Highways: Implications for Air Quality and Energy Use (1995).

Appendix 20: TRB, Potential Impacts of Climate change on U.S. Transportation

Appendix 21: Subsidyscope, Analysis Finds Shifting Trends in Highway Funding: User Fees Make Up Decrease Share

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City of Wasco

Bob Wren, Deputy Director of Public Works – email dated 6/2/10

Item 3. 2011 RTP SEIR – Page 2-8 – Question – This page includes the Shafter/Wasco High Speed Rail Heavy Maintenance Facility for $450,000,000. Has a determination been made on the site location and if not do you know when a decision might be made? 5

3.0 CHANGES, ADDITIONS AND CORRECTIONS TO THE DRAFT SEIR

The following changes, additions and corrections to the Draft SEIR are recommended. Such changes, additions and corrections have been identified to address written comments received on the Draft SEIR.

- Chapter 2, Page 2-2, Section 2.3, Paragraph 1, 5th Sentence; replace the date "September 20, 2007" with "April 2010".

- Chapter 2, Page 2-7, Table 2-2; remove the words "four lanes" at the end of the project description for the Route 119 project between Cherry Avenue and Elk Hills Road.

- Chapter 2, Page 2-19, under the section titled "Limited Transit Dollars"; replace the existing paragraphs with the following:

  Financial resources for public transportation are limited while demand for those resources continues to increase. Traditional public transportation revenue sources do not support the increasing need for public mass transportation to help mitigate population increases, clean air mandates, and trip reduction programs. The expansion of public transportation services in Kern County is predicated on an aggressive financial plan. The Golden Empire Transit District's (GET) budgets have increased annually as the system responds to increasing consumer demand for transit, in part caused by recessive economic times and shrinking disposable dollars. The financial core to subsidize public transit service is the Transportation Development Act (TDA) Local Transportation Fund (LTF). Funds for the LTF are derived from that portion of the local sales and use tax attributed to the County, or one quarter of 1% of the 8.25% sales and use tax rate. Kern Council of Governments (Kern COG) apportions these taxes to public transit throughout Kern County. In addition, the TDA authorized the State legislature to budget for State Transit Assistance (STA) funding, by means of allocating a portion of the sales and use tax on gasoline.

  However, in an attempt to balance the State's financial problems, the Governor suspended the State Transit Improvement Fund for five years. This action began in 2008-09 and will continue, unless alternate financial means become available. Lost funding reduces the opportunity to increase transit service or to acquire more buses. The action clearly demonstrates transit's role in relation to all state-funded activities.

  Currently, no local dedicated funding source is available for public transit. A one-half cent countywide sales tax ballot issue for highway as well as transit improvements failed in November 2006. Given the desire on the part of many policy makers and residents for public transit to play a meaningful role in improving air quality, promoting mobility among transit dependant populations, and supporting economic development in the community, the need to secure a dedicated and increasing source of funding becomes imperative.

- Chapter 2, Page 2-20, under the section titled "Population Residing More Than ¼ Mile From Transit Route"; replace the paragraph with the following:

  GET District policy is for 90 percent of residents within metropolitan Bakersfield to be within one-quarter mile of an existing route; however, within the District, several populated areas are more than one-quarter mile from a transit route. Currently, GET serves about 75 percent, or 15 percent less than the District goal. Most of this population is on the periphery of metropolitan Bakersfield, with some areas that form "holes" in the one-quarter mile buffer around the routes. While some of the unserved areas may not have high transit potential, portions of the southwest do have high transit potential, but are currently under-served.

Continued development around the urban fringe presents many difficulties in meeting route coverage standards. Much of the new development is low density; middle and upper income housing that tends to generate little transit ridership. Furthermore, new development is not always contiguous to existing development causing transit services to cover unproductive miles in outlying areas that generate low ridership. However, urban fringe development may generate levels of transit ridership to justify express bus service, such as is offered by GET between Bakersfield College and California State University Bakersfield.

- Chapter 2, Page 2-20, under the section titled "Recent Transit Planning Activities"; add the following paragraphs before the Section titled "Eastern Sierra Public Transportation Study":

  New Public Transportation Services Plan: In 2005 GET submitted a joint application with Odyssey, a statewide transportation nonprofit organization, for a Caltrans Community-Based Transportation Planning grant to help plan improvements to transit service in Bakersfield. The purpose of this grant was to develop a service plan to provide more innovative and effective public transportation options for serving under-served and hard-to-serve neighborhoods and major destinations within Bakersfield. The primary goal of the project was to engage GET's stakeholders in the planning process and develop plans that improve mobility and increase transportation choices and transit usage given available resources. The study was completed in 2008 and several service improvements recommended in this study have been implemented, including headway improvements and service extensions.

  Long Range Plan: The Golden Empire Transit District in partnership with the Kern Council of Governments is initiating a metropolitan Bakersfield Transit System Long Range Plan. The Plan is expected to be completed in 2011. The Plan will provide public agency staff and elected officials with information documenting the relationship between population growth in metropolitan Bakersfield, transit ridership demand, funding, and the evaluation of current operations and efficiencies. The purpose of the Plan is to address emerging intra-city transit system needs. It will also address connectivity between rural areas and major regional transportation facilities such as the Amtrak train station and Bakersfield's airports. The Plan includes public outreach to solicit public input on transit needs.

- Chapter 3, Page 3-73, Section 3.4.2, under the subsection titled "Mitigation Measures"; add the following to the end of the list of measures:

  - Use resource data to inform transportation decision-making.
  - Use watershed, conservation, and recovery plans to identify important environmental considerations for the Kern COG region, such as critical wildlife corridors, the most important areas to protect for sensitive species, and areas with a high concentration of resources.
  - Give conservation plans as much weight as General Plans when planning transportation investments.
  - Incorporate concepts such as 100 to 200 foot buffers for stream corridors, and identification and improvement of priority culverts that currently restrict wildlife corridors and natural processes of stream and river systems.
  - Use parcel maps to identify larger, undivided parcels for ease of acquisition and preservation, and designate areas as potential future mitigation sites.
  - Consider the resource, "Eco-logical: An Ecosystem Approach to Developing Infrastructure Projects" (2006) which encourages Federal, State, Tribal and Local partners involved in the infrastructure planning, design, review, and construction to use flexibility in regulatory processes.
  - Identify financial mechanisms to fund mitigation, such as development fees, sales tax, or the use of funds from alternative methods to identify and protect critical resource areas.
  - Establish conservation easements that connect to and expand existing conservation areas.

- Describe locally-developed measures such as designated open space, measures requiring development set-backs near streams, etc.
- The following list of data resources should be referenced during development of biotic plans and studies for transportation improvement projects:
  - U.S. Fish & Wildlife Service species recovery plans;
  - USDA Natural Resources Conservation Service wetland data;
  - Nature Conservancy data and regional planning documents;
  - California Department of Fish and Game Natural Diversity Database; and
  - Local non-profit and land trust group information.

- Chapter 3, Page 3-96, Section 3.5.2; add the following mitigation measure to the list of mitigation measures:

  Project level environmental documents shall analyze construction and maintenance Greenhouse Gas (GHG) emissions.

- Chapter 3, Page 3-200, Section 3.14; replace the 3rd sentence in the 2nd paragraph with the following sentence:

  Current GET annual ridership (under Bus System Improvements) is approximately 7.3 million.

- Chapter 3, Page 3-200, Section 3.12; replace the 4th paragraph with the following:

  Golden Empire Transit (GET) has provided public transit service for the metropolitan Bakersfield area since 1973. Today, GET operates 20 routes with a maximum of 70 buses in service. GET's service area covers 160 square miles and serves approximately 459,000 residents. GET-A-Lift provides complementary paratransit service within metropolitan Bakersfield for those who are physically unable to use the fixed route service. Elderly and disabled services are also provided by the Consolidated Transportation Service Agency (CTSA).

  GET has determined that within metropolitan Bakersfield, the east and southeast areas exhibit the highest service potential. This analysis is based on population density, income, auto ownership, and age. Other areas with high transit potential are portions of Oildale and central Bakersfield. The lowest potential rider areas include portions of the southwest and northwest.

  Total transit ridership across Kern County showed a slight decline over the years FY2004-2007 as shown in Table 4-4 in the RTP. Ridership for GET and Kern Regional Transit (KRT), however, has increased in more recent years as a result of service expansion and rising gasoline prices. Ridership reflected in Table 4-4 for GET and GET-A-Lift for 2007-08 was 7,029,420 and for 2008-09 was 7,578,323. An all-time record for ridership was achieved in 2008-09.

  For GET, the regular fare is $1.00. For seniors & the disabled, the fare is $.50. The fare for GET-A-Lift is $2.00.

  In 2008-09, GET's fixed route operation achieved its highest ridership level ever with 7,514,503 riders. Over the last several years, GET-A-Lift's ridership has increased almost every year. Changes since 2000 include: Sunday and evening service was initiated, Day Passes replaced transfers, headways were improved on several routes, and the first 40 ft.-length buses were placed into service. GET has made a commitment to improving Kern County's air quality by purchasing compressed natural gas (CNG) buses. By early 2006, GET's entire fleet, including those assigned to staff, was CNG-fueled. GET has installed bike racks on all of its buses to facilitate intermodal trips, which provides an ancillary improvement to air quality. In partnership with IKEA and Tejon Ranch, GET initiated a new express route between Downtown Bakersfield, Bakersfield Auto Mall, and

Tejon Industrial Complex in October 2008. A permanent park and ride lot for this service will be established in the Greenfield area.

- Include the following section on Energy and Energy Conservation in Chapter 3 of the Draft SEIR as Section 3.15:

3.15 ENERGY AND ENERGY CONSERVATION

This section describes the existing energy resources, and analyzes the effects on energy consumption and conservation that would result from implementing the proposed 2035 projects.

Regulatory

Federal

- Energy Policy and Conservation Act

  The Energy Policy and Conservation Act of 1975 sought to ensure that all vehicles sold in the U.S. would meet certain fuel economy goals. Through this Act, Congress established the first fuel economy standards for on-road motor vehicles in the U.S. Pursuant to the Act, the National Highway Traffic and Safety Administration, which is part of the USDOT, is responsible for establishing additional vehicle standards and for revising existing standards. Since 1990, the fuel economy standard for new passenger cars has been 27.5 mpg. Since 1996, the fuel economy standard for new light trucks (gross vehicle weight of 8,500 pounds or less) has been 20.7 mpg. Heavy-duty vehicles (i.e., vehicles and trucks over 8,500 pounds gross vehicle weight) are not currently subject to fuel economy standards. Compliance with federal fuel economy standards is determined on the basis of each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the U.S. The Corporate Average Fuel Economy (CAFE) program, which is administered by the EPA, was created to determine vehicle manufacturers' compliance with the fuel economy standards. The EPA calculates a CAFE value for each manufacturer based on city and highway fuel economy test results and vehicle sales. Based on the information generated under the CAFE program, the USDOT is authorized to assess penalties for noncompliance.

- Energy Policy Act of 1992 (EPAct)

  The Energy Policy Act of 1992 (EPAct) was passed to reduce the country's dependence on foreign petroleum and improve air quality. EPAct includes several parts intended to build an inventory of alternative fuel vehicles (AFVs) in large, centrally fueled fleets in metropolitan areas. EPAct requires certain federal, state, and local government and private fleets to purchase a percentage of light-duty AFVs capable of running on alternative fuels each year. In addition, financial incentives are also included in EPAct. Federal tax deductions will be allowed for businesses and individuals to cover the incremental cost of AFVs. States are also required by the act to consider a variety of incentive programs to help promote AFVs.

- Energy Policy Act of 2005

  The Energy Policy Act of 2005 was signed into law by President Bush on August 8, 2005. Generally, the act includes provisions for renewed and expanded tax credits for electricity generated by qualified energy sources, such as landfill gas; provides bond financing, tax incentives, grants, and loan guarantees for clean

renewable energy and rural community electrification; and establishes a federal purchase requirement for renewable energy.

- The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users

  SAFETEA-LU, enacted August 10, 2005, authorizes the federal surface transportation programs for highways, highway safety, and transit. SAFETEA-LU addresses the many challenges facing our transportation system today—challenges such as improving safety, reducing traffic congestion, improving efficiency in freight movement, increasing intermodal connectivity, and protecting the environment—as well as laying the groundwork for addressing future challenges. SAFETEA-LU promotes more efficient and effective federal surface transportation programs by focusing on transportation issues of national significance, while giving state and local transportation decision makers more flexibility for solving transportation problems in their communities.

State of California

- Senate Bill 1078

  SB 1078 establishes a renewable portfolio standard (RPS) for electricity supply. The RPS requires that retail sellers of electricity, including investor-owned utilities and community choice aggregators, provide 20 percent of their supply from renewable sources by 2017. This target date was moved forward by SB 1078 to require compliance by 2010. In addition, electricity providers subject to the RPS must increase their renewable share by at least 1 percent each year. The outcomes of this legislation will impact regional transportation powered by electricity.

- State of California Integrated Energy Policy Report

  In 2002, the Legislature reconstituted the State's responsibility to develop an integrated energy plan for electricity, natural gas, and transportation fuels. The California Energy Commission (CEC) adopts and transmits to the Governor and Legislature a report of findings every 2 years. At a Special Business Meeting on November 12, 2003, the CEC adopted the 2003 Integrated Energy Policy Report. The 2004 Update to the Integrated Energy Policy Report was adopted by the CEC on November 3, 2004. The 2005 Integrated Energy Policy Report was adopted by the CEC on November 21, 2005. These reports make recommendations to increase California's energy supplies, reduce energy demand, broaden the range of alternatives to conventional energy sources, and improve the State's energy delivery infrastructure.

- California Strategy to Reduce Petroleum Dependence (AB 2076)

  AB 2076 (Chapter 936, Statutes of 2000) requires the CEC and the Air Resources Board (ARB) to develop and submit to the Legislature a strategy to reduce petroleum dependence in California. The statute requires the strategy to include goals for reducing the rate of growth in the demand for petroleum fuels. In addition, the strategy is required to include recommendations to increase transportation energy efficiency as well as the use of nonpetroleum fuels and advanced transportation technologies including alternative fuel vehicles, hybrid vehicles, and high-fuel efficiency vehicles.

  The strategy, Reducing California's Petroleum Dependence, was adopted by the CEC and ARB in 2003. The strategy recommends that California reduce on-road gasoline and diesel fuel demand to 15 percent below 2003 demand levels by 2020 and maintain that level for the foreseeable future; the Governor and Legislature work to establish national fuel economy standards that double the fuel efficiency of new cars,

light trucks, and SUVs; and increase the use of nonpetroleum fuels to 20 percent of on-road fuel consumption by 2020 and 30 percent by 2030.

- Alternative Fuels Plan Assembly Bill 1007

  AB 1007 requires the CEC to prepare a state plan to increase the use of alternative fuels in California. The plan shall include an evaluation of alternative fuels for emissions or criteria air pollutants, air toxics, GHGs, water pollutants, and other harmful substances, and their impacts on petroleum consumption. The plan shall set goals for increased alternative fuel use in the state for the years 2012, 2017, and 2022 and recommend policies to ensure the alternative fuel goals are attained, including standards on transportation fuels and vehicle and policy mechanisms to ensure vehicles operating on alternative fuels use those fuels to the maximum extent feasible. The plan was adopted in December 2007.

- Bio-energy Action Plan – Executive Order #S-06-06

  Executive Order #S-06-06 establishes targets for the use and production of bio-fuels and bio-power and directs state agencies to work together to advance biomass programs in California while providing environmental protection and mitigation. The executive order establishes the following target to increase the production and use of bio-energy, including ethanol and biodiesel fuels made from renewable resources: produce a minimum of 20 percent of its bio-fuels within California by 2010, 40 percent by 2020, and 75 percent by 2050. The executive order also calls for the state to meet a target for use of biomass electricity.

- Governor's Low Carbon Fuel Standard (Executive Order #S-01-07)

  Executive Order #S-01-07 establishes a statewide goal to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020 through establishment of a Low Carbon Fuel Standard. The Low Carbon Fuel Standard shall be incorporated into the State Alternative Fuels Plan required by AB 1007 and is one of the proposed discrete early action GHG reduction measures identified by ARB pursuant to AB 32.

Local

Kern Energy Watch Program

Kern COG has developed the Kern Energy Watch Program to design and operate a local government partnership program for the purpose of increasing energy conservation and efficiency within the county, cities, special districts and other units of local government in the Kern region. Public utility partners include Pacific Gas & Electric, Southern California Edison and Southern California Gas (Sempra Energy).

The program is intended to:

- Organize and coordinate the activities of the Kern Energy Advisory Committee (KEAC), including preparation of meeting agendas, item supporting documentation and minutes;
- Compose and circulate a Request for Proposals for professional services in designing an comprehensive and integrated Kern Regional Energy Plan;
- Conduct an inventory and needs assessment of local resource, information and training activities of agencies in the Kern region;
- Design and implement a marketing program to provide program information to units of local government;

- Meet with each unit of local government and secure a formal commitment to join the Kern Energy Watch Program;
- Coordinate the conduct of energy assessments and audits;
- Conduct or coordinate the conduct of energy efficiency workshops & seminars; and
- Coordinate the provision of technical support and services for energy efficient retrofit Projects.

Kern Regional Energy Plan

Kern COG will embark on the development of this plan during FY 2010-11. Kern COG will develop and coordinate the implementation of the Kern Regional Energy Plan as part of its Kern Energy Watch Program. The effort will also involve integrating transportation and energy planning efforts in the Kern region.

Environmental Setting

Energy Consumption and Conservation

The study area is comprised of highways, railways, bicycle trails, state routes, roads, and Caltrans rights-of-way. This analysis assumes that automobiles, trucks, transit buses, and other forms of transportation would continue to operate within the Kern region and use a variety of energy forms, including gasoline, compressed natural gas, diesel, and electricity. This section considers the supply and demand for both electricity and fossil fuels.

Energy is fundamental to the economy and the quality of life of the Kern County region. The primary energy source for the U.S. is petroleum (also referred to as "oil"), which is refined to produce fuels like gasoline, diesel, and jet fuel. Oil is a finite, nonrenewable energy source. World consumption of petroleum products has grown steadily since 1983; as of 2005, world consumption of oil had reached 84 million barrels per day (GAO 2007). The world supply of oil is anticipated to peak (i.e., reach the point of maximum production) sometime between now and 2040, before beginning a terminal decline that will put a significant strain on the economy if not anticipated and mitigated. However, the timing of the peak depends on multiple, uncertain factors that will affect how quickly remaining oil is consumed, such as the amount of oil that still remains in the ground; how much of the amount in the ground can be extracted and produced based on technological, economic, and environmental feasibility; and future demand for oil.

The U.S., with approximately 5 percent of the world's population, accounts for just fewer than 25 percent of world oil consumption, roughly 21 million barrels per day (EIA 2007). U.S. oil production peaked around 1970 and has been declining ever since; it was about five million barrels per day in 2005. As a result, the U.S. imported about 76 percent of its oil in 2005. The U.S. transportation sector is heavily dependent on oil and represents about 69 percent of U.S. petroleum consumption. Within the transportation sector, light vehicles (i.e., cars, light trucks [two-axle, four-tire trucks], and motorcycles) represent about 60 percent of the petroleum-based energy consumption.

California's transportation sector is equally dependent upon oil, with petroleum-based fuels currently providing nearly all (96 percent) of California's transportation energy needs (State of California 2007). Furthermore, transportation-related activities represent almost half (48 percent) of California's petroleum-based fuel consumption. According to a 2005 California Energy Commission (CEC) report, California's demand for transportation fuels has increased 53 percent in the last 20 years, and in the next 20 years gasoline and diesel demand will increase another 36 percent (CEC 2005). California refineries increasingly rely on imported petroleum products to meet this demand. In 2003 the CEC and ARB adopted a two-part strategy to reduce the state's petroleum demand: promoting improved vehicle efficiency and increasing the use of alternative fuels. In 2005, alternative fuels represented 6 percent of the state's transportation energy needs. In 2006, CEC and ARB

set a goal that 20 percent of all transportation energy in 2020 comes from alternative fuels. State plans, programs, and regulations to implement this strategy are further discussed in the Regulatory Setting section below.

Similar to California and the U.S. as a whole, the Kern region relies primarily on oil to meet its transportation needs. Motor vehicles are the largest consumer of fuels in the region's transportation sector. After gasoline, diesel fuel is the most utilized transportation energy source. The primary consumers of diesel fuel in the transportation sector are heavy-duty trucks, with medium-duty trucks, buses, light-duty passenger cars, and railway locomotives accounting for remaining diesel fuel consumption.

Alternative fuels are defined as fuels not derived from petroleum, such as natural gas, ethanol, and electricity. However, like petroleum, alternative fuels like natural gas and ethanol (which is primarily composed of diesel fuel) are also nonrenewable, finite resources. Electricity is also considered nonrenewable when generated from natural gas or coal, but considered renewable when generated from sources like solar, hydroelectric, or wind energy. Most alternative fuel facilities in the region supply compressed natural gas (CNG) or electricity. The region's limited alternative fuel infrastructure severely constrains the use of alternative fuel passenger vehicles.

Although average fuel efficiency for autos and trucks has experienced some improvements during the last quarter-century, fuel consumption associated with the large increase in VMT has exceeded the fuel consumption reductions achieved by improved efficiency, and the total amount of annual fuel consumption has continued to increase. The equipment and vehicles involved in the construction of transportation infrastructure (i.e., roadway and highway improvements; rail lines; etc.) also consume energy. Currently, construction equipment and vehicles are generally dependent on petroleum-based fuels.

Energy Conservation and Global Climate Change

The consumption of nonrenewable energy (primarily gasoline and diesel fuel) associated with construction activities and the operation of passenger, public transit, and commercial vehicles results in GHG emissions that cause global climate change (also referred to herein as "climate change" and "global warming"). In addition, alternative fuels like natural gas (including CNG and liquid natural gas [LNG]), ethanol, and electricity (unless derived from solar, wind, nuclear, or another energy source that does not produce carbon emissions) also result in GHG emissions and contribute to global climate change. An overview of climate change, the anticipated impacts of climate change to California, and the climate change impacts of the proposed 2011 RTP are provided in Chapter 3, Section 3.5 of the Draft SEIR. Impacts and mitigation measures associated with climate change also relate to the conservation of energy resources.

Environmental Impacts, Mitigation Measures, and Significance After Mitigation

Criteria for Significance

The following significance criteria were used to determine the level of significance of impacts on energy resources and energy conservation resulting from the proposed Project. Significance criteria were developed based on Appendix F of the State CEQA Guidelines and on professional judgment. In general, an individual improvement project contained within the RTP would result in a significant energy impact if it:

- Results in an increase in total consumption of nonrenewable energy or reduces the ability of the region to conserve energy resources.

Impact Analysis

The proposed 2011 RTP plans improvements to the region's transportation network through the year 2035. Since the transportation sector accounts for a large portion of the energy consumed in the Kern region, implementation of transportation network improvements would affect the region's energy consumption through 2035. In addition, construction of these improvements would result in increased energy consumption due to the operation of construction equipment and vehicles during construction activities. Multiple factors beyond the control of Kern COG and outside the scope of the proposed 2011 RTP may influence future transportation-related energy consumption patterns under the proposed 2011 RTP. These factors include but are not limited to state and federal regulatory actions; local land use decisions; technological improvements; regional economic conditions; the fuel-efficiency and fuel-source of private automobiles; the price of oil, gasoline, diesel, electricity, and other fuels; the source of region's electric power (i.e., proportion of renewable and nonrenewable sources); the amount of oil imported by the U.S. and others.

Although energy consumption would increase under the proposed 2011 RTP, the transportation improvements are designed to the improve energy efficiency of the regional transportation system by increasing use of more fuel-efficient public transit, carpools, and vanpools, and improving circulation system levels of service. See the Climate Change discussion in Section 3.5 of the Draft SEIR for a detailed discussion of RTP actions that promote GHG emissions reductions, energy conservation, energy efficiency and reduced fuel consumption. Examples of transportation improvements included in the proposed 2011 RTP that would improve energy efficiency include proposed transit improvements that would encourage optimized use of public transportation, and enhanced transit programs with new routes that would operate at higher speeds. Public transportation provides a more energy-efficient mode of travel than single-passenger vehicles, thereby reducing the region's transportation energy consumption. Any reductions in traffic congestion realized through implementation of enhanced transit operations would also allow for more energy-efficient vehicular travel.

The proposed 2011 RTP would also involve highway and arterial widenings, and new freeway interchanges. This in turn would decrease travel time and congestion and consequently decrease fuel consumption from individual vehicles. Despite these energy efficient improvements, total and per capita energy consumption associated with the transportation system is still anticipated to increase in 2035 under the proposed 2011 RTP.

The 2011 RTP encourages the transport of goods by rail to reduce congestion on the freeway system. Hauling goods by rail has a positive energy impact. The Federal Railroad Administration estimates that intermodal rail is 1.4 to 3.4 times more fuel efficient than trucks. This indicates reduced energy efficiency of goods movement in the region and increased nonrenewable energy consumption.

The construction of transportation infrastructure identified in the proposed 2011 RTP would involve the use of construction equipment and vehicles, which are generally dependent upon nonrenewable petroleum-based fuels, on a large scale. However, it is not feasible to estimate energy consumption associated with future construction of the projects in the proposed 2011 RTP at this program level of analysis. Nevertheless, the large scale of construction activities that would be required to implement the proposed 2011 RTP would result in an additional amount of additional energy consumption associated with the proposed 2011 RTP.

Lastly, the implementation of new transit stations and centers, transit priority measures, freeway and arterial widenings, and other improvements would include street and station lighting, parking structure lighting, traffic signals, electronic signage, and other ancillary components associated with the types of transportation improvements included in the proposed 2011 RTP. The energy consumption associated with these features would also increase under the proposed 2011 RTP.

Impact 3.15.1 - Energy Consumption & Conservation Impacts

Construction of the transportation improvements programmed in the proposed 2011 RTP would increase energy consumption due to the operation of construction equipment and vehicles. Given the number of large-scale improvements programmed into the proposed 2011 RTP, the increase in energy consumption associated with construction activities would be substantial. Although construction equipment and vehicles would be operated in accordance with all applicable rules and regulations, the substantial increase in energy consumption associated with the construction equipment and vehicles primarily powered by nonrenewable fuels under the proposed 2011 RTP is considered a significant impact.

Operation of the transportation improvements identified in the proposed 2011 RTP would increase the total and per capita amount of gasoline and diesel fuel consumption associated with the regional transportation network. Since gasoline and diesel are nonrenewable, petroleum-based fuels, the increase in gasoline and diesel consumption under the proposed 2011 RTP is considered a significant impact.

In addition to increased energy consumption directly associated with transportation activities, energy consumption would also increase as a result of new lighting including, but not limited to, lighting for streets stops or stations, transit station parking structures, and rail tunnels; traffic signals; electronic signage; and other ancillary electric, natural gas, or other energy-consuming components of transportation improvements that would be implemented under the proposed 2011 RTP. Increased energy consumption levels associated with these ancillary project features are considered a significant impact.

The proposed 2011 RTP includes goals and policies supporting smart growth through financial incentives, housing and mixed-use projects at existing and planned transit stations, support for local efforts to develop pedestrian master plans, and other activities that tend to reduce GHG emissions. However, since Kern COG has no direct authority over land use planning and other local decisions, the extent to which the goals and policies supporting smart growth would be implemented by local jurisdictions is unknown.

Since the 2011 RTP (2035 Planned scenario) would decrease highway congestion and enhance alternative modes relative to the No Project (2007 RTP) and No Build alternatives (2035 growth versus existing and programmed projects), it would result in potentially beneficial effects on the consumption and conservation of energy resources.

Mitigation Measures

The following mitigation measures shall be implemented by project implementation agencies to reduce the significant energy impacts of the proposed 2011 RTP. In addition, climate change mitigation measures referenced in Chapter 3, Section 3.5 will also contribute to the mitigation of energy consumption and energy conservation impacts.

- Project implementation agencies shall review energy impacts as part of any CEQA-required project-level environmental analysis and specify appropriate mitigation measures for any identified energy impacts.

- During the design and approval of transportation improvements implemented under the proposed 2011 RTP, the following energy efficiency measures shall be incorporated when applicable:

  - The design or purchase of any lighting fixtures including but not limited to lighting at transit stations, arterials or freeways, and parking structures/lots shall achieve energy reductions beyond an estimated baseline energy use for such lighting.

- LED technology shall be used for all new or replaced traffic lights, rail signals, and other features compatible with LED technology.

- Local agencies should consider various best practices and technological improvements that can reduce the consumption of fossil fuels such as:

  - Expanding light-duty vehicle retirement programs
  - Increasing commercial vehicle fleet modernization
  - Implementing driver training modules on fuel consumption
  - Replacing gasoline powered mowers with electric mowers
  - Reducing idling from construction equipment
  - Incentivizing alternative fuel vehicles and equipment
  - Developing infrastructure for alternative fueled vehicles
  - Implementing truck idling rules, devices, and truck-stop electrification
  - Requiring electric truck refrigerator units
  - Reducing locomotives fuel use
  - Modernizing older off-road engines and equipment
  - Encouraging freight mode shift
  - Limit use and develop fleet rules for construction equipment
  - Requiring zero-emission forklifts

- Local agencies should include energy analyses in environmental documentation and general plans with the goal of conserving energy through the wise and efficient use of energy. For any identified energy impacts, appropriate mitigation measures should be developed and monitored. Kern COG recommends the use of Appendix F, Energy Conservation, of the *CEQA Guidelines.*

- Local agencies should streamline permitting and provide public information to facilitate accelerated construction of solar and wind power.

- Local agencies should adopt a "Green Building Program" to promote green building standards. Green buildings can reduce local environmental impacts, regional air pollutant emissions and global greenhouse gas emissions. Green building standards involve everything from energy efficiency, usage of renewable resources and reduced waste generation and water usage. For example, water-related energy use consumes 19 percent of the state's electricity. The residential sector accounts for 48 percent of both the electricity and natural gas consumption associated with urban water use. While interest in green buildings has been growing for some time, cost has been a main consideration as it may cost more up front to provide energy-efficient building components and systems. Initial costs can be a hurdle even when the installed systems will save money over the life of the building. Energy efficiency measures can reduce initial costs, for example, by reducing the need for over-sized air conditioners to keep buildings comfortable. Undertaking a more comprehensive design approach to building sustainability can also save initial costs through reuse of building materials and other means.

  A comprehensive study of the value of green building savings is the 2003 report to California's Sustainable Building Task Force. In the words of the report: "While the environmental and human health benefits of green building have been widely recognized, this comprehensive report confirms that minimal increases in upfront costs of about 2% to support green design would, on average, result in life cycle savings of 20% of total construction costs -- more than ten times the initial investment. For example, an initial upfront investment of up to $100,000 to incorporate green building features into a $5 million project would result in a savings of $1 million in today's dollars over the life of the building."

- Local governments should alter zoning to improve jobs/housing balance, create communities where people live closer to work, and bike, walk, and take transit as a substitute for personal auto travel. Creating walkable, transit oriented nodes would generally reduce energy use and greenhouse gas emissions. Residential energy use (electricity and natural gas) accounts for 14 percent of California's greenhouse gas emissions. It is estimated that households in transit-oriented developments drive 45 percent less than residents in auto-dependent neighborhoods. In addition, mixed land uses (i.e., residential developments near work places, restaurants, and shopping centers) with access to public transportation have been shown to save consumers up to 512 gallons of gasoline per year. Furthermore, studies have shown that the type of housing (such as multi-family) and the size of a house have strong relationships to residential energy use. Residents of single-family detached housing consume over 20 percent more primary energy than those of multifamily housing and 9 percent more than those of single-family attached housing.

- Kern COG shall work with its member agencies to increase the number of AFVs (i.e., vehicles not powered strictly by gasoline or diesel fuel) both in municipally owned vehicles, as well as those owned by franchisees of these cities, such as trash haulers, green waste haulers, street sweepers, and curbside recyclable haulers.

- Bid solicitations for construction of projects proposed in the 2011 RTP and subsequent RTP updates shall preference the use of alternative formulations of cement and asphalt with reduced GHG emissions to the extent that such cement and asphalt formulations are available at a reasonable cost in the marketplace. Solicitations shall also preference the recycling of construction waste and debris if market conditions permit.

- Kern COG shall continue to develop, in coordination with the California Air Resources Board, a data and information collection and analysis system that provides an understanding of the energy demand and greenhouse gas emissions in the Kern region.

- All mitigation measures listed in Chapter 3, Section 3.5.1, are incorporated by reference and shall be implemented by implementing agencies to address energy conservation impacts.

Significance After Mitigation

Implementation and monitoring of the above mitigation measures will provide the framework and direction for subsequent individual improvement project-specific mitigation designed to avoid or reduce the identified significant Project impacts to a less than significant level.

- Chapter 4, Page 4-5, under the section titled "Transportation/Circulation", Paragraph 1; add the following sentence to the end of the paragraph: Kern COG and Fresno COG both have the ability to conduct a mode split analysis.

- Chapter 4, Page 4-5, under the section titled "Transportation/Circulation", Paragraph 2, 2nd Sentence; replace the sentence with the following: Kern COG has completed the illustration, which can be found on Page 4-82 of the RTP.

EXHIBIT A - STATEMENT OF OVERRIDING CONSIDERATIONS

SUMMARY OF SIGNIFICANT, ADVERSE, UNAVOIDABLE IMPACTS

Kern COG has prepared a mitigation monitoring program for the Kern COG 2011 Regional Transportation Plan Draft and Final Subsequent Environmental Impact Report (SEIR) as required by the California Environmental Quality Act (CEQA), Public Resources Code 21000 et seq. Kern COG identified several significant, adverse, and unavoidable impacts in the Draft and Final SEIRs. As such, CEQA requires the Kern COG Board of Directors to balance the benefits of the Proposed Plan Option against its unavoidable environmental risks in determining whether to approve the Regional Transportation Plan. The SEIRs identify the following significant, adverse, and unavoidable environmental impacts:

- Impact 3.1.1: Construction and implementation of individual projects could potentially impede or block views of scenic resources as seen from the transportation facility or from the surrounding area.

- Impact 3.1.2: Construction and implementation of the projects could alter the appearance of scenic resources along or near designated scenic highways and vista points.

- Impact 3.1.4: Construction and implementation of individual projects could potentially create a new source of substantial light or glare that would affect day or nighttime views of scenic resources as seen from the transportation facility or from the surrounding area.

- Impact 3.1.5: Kern County will experience significant growth and development by 2035. The 2011 RTP influences the pattern of this development, by increasing mobility and including transportation measures. At the regional scale, the 2011 RTP's contribution to impacts on the overall visual character of the existing landscape setting would be cumulatively significant.

- Impact 3.2.1: Individual improvement projects in the Plan could have significant impacts on land use patterns, potentially causing land use growth and development to occur in areas not previously envisioned for growth and development. This impact could be especially significant on agricultural land uses within the County.

- Impact 3.3.3: The Project will result in beneficial effects of system-wide improvement in traffic flows and reduced congestion, which would reduce the potential for increased air emissions. While TCMs have been identified in the Air Quality Conformity Findings, the TCMs will not result in attainment of all pollutants over time or by the year 2035.

- Impact 3.4.1: The Project includes individual improvement projects that may result in direct removal or degradation of riparian habitat or other sensitive natural communities during construction activities such as grading and grubbing.

- Impact 3.4.2: The Project includes improvements that may result in direct impacts to plant and wildlife species including rare, threatened and/or endangered species during construction and operation of the proposed transportation facilities through the removal of native habitat.

- Impact 3.4.3: The Project includes improvements that may result in indirect impacts to plant and wildlife species including rare, threatened and/or endangered species during the construction and operation through edge effects such as noise, lighting and visual deterrents.

- Impact 3.4.4: The Project includes individual improvement projects that would result in temporary and permanent impacts to terrestrial and aquatic wildlife movement.

- Impact 3.4.6: The 2011 RTP would potentially increase siltation of streams and other water resources from exposures of erodible soils during construction activities.

- Impact 3.4.7: Growth and development in Kern County will increase substantially by 2035. The 2011 RTP, by increasing mobility and including transportation measures, influences the pattern of this growth and development.

- Impact 3.5.1: Increased Transportation GHG Emissions May Cause Climate Change

- Impact 3.6.1: Cultural resources may be encountered during development of projects proposed in the 2011 RTP. These resources may include, but are not limited to, prehistoric and historical archaeological sites, paleontological sites, historical buildings, and structures associated with agriculture, mining, and petroleum development. Properties important to Native American communities and other ethnic groups, including tangible properties possessing intangible traditional cultural values, also may be present. Such resources may exist individually, in groupings of modest size, or in districts covering substantial geographies.

- Impact 3.6.2: Construction activities may impact known paleontological resources.

- Impact 3.6.3: The 2011 RTP's influence on growth contributes to regional impacts to existing historic resources and previously undisturbed and undiscovered cultural resources, as described in Impacts 3.6.1 and 3.6.2 above.

- Impact 3.7.2: Some improvement projects require significant earthwork, increasing potential slope failure and long-term erosion. Earthwork can also alter unique geologic features. Project impacts would be considered significant in some cases.

- Impact 3.7.5: Although the scope of study performed for this EIR evaluation did not include a determination for project-specific liquefaction or seismic settlement potential, it is possible that liquefiable soils or soils susceptible to seismic compaction during ground shaking exist within areas of planned transportation improvement projects. This is a potentially significant impact, which will require analysis as part of subsequent project-specific environmental review.

- Impact 3.7.6: Some street and highway projects may be proposed along alignments that will affect State-owned and State mineral-reserved lands.

- Impact 3.7.7: Given the regional scale and growth-inducing nature of the projects and programs included in the 2011 RTP, the cumulative impacts of the 2011 RTP on geological units and soils as well as the potential exposure to substantial adverse effects to people and property would be significant.

- Impact 3.8.2: The implementation of the 2011 RTP could create a hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment during transportation. Implementation of the 2011 RTP would facilitate the movement of goods, including hazardous materials, through the region. Transportation of goods, in general, and hazardous materials in particular, can thus be expected to increase substantially with implementation of the 2011 RTP.

- Impact 3.9.5: The 2011 RTP, by increasing mobility and by including transportation measures, influences the pattern of this development. The 2011 RTP's influence on growth would contribute to the conversion of undeveloped land, resulting in impacts to water quality, stormwater infiltration and groundwater recharge, flood hazard impacts, and wastewater treatment services, and water demand.

- Impact 3.10.1: While the RTP is likely to result in a positive outcome related to supportive land use conditions for alternative forms of transportation such as transit, other projects in the RTP could have significant impacts on land use patterns, potentially causing land use growth and development to occur in areas not previously envisioned for growth and development. This impact could be especially significant on agricultural land uses within the County.

- Impact 3.10.2: Sensitive receptors could be impacted because of the proposed individual improvement projects. These possible impacts would depend on several factors such as the type of individual improvement project proposed for the area, projected land use designation of the area, and duration of proposed construction activities. For the most part, improvement projects involving new systems would pose the greatest potential impacts to sensitive receptors. Specifically, sensitive receptors located in the vicinities of such improvement projects could be significantly impacted by the construction and operation of the proposed projects. Additionally, modification projects would result in short-term construction and long-term impacts to sensitive receptors.

- Impact 3.10.3: Construction and implementation of projects would result in the loss of open space and community recreation areas. This would be considered a potentially significant impact. Pockets of open space vary in size and location throughout the County and within the cities. Open space land uses include agricultural areas, public parks, recreational facilities, and areas planned for such uses.

- Impact 3.10.4: Implementation of the projects and programs contained in the 2011 RTP could potentially result in the disturbance or loss of significant agricultural resources throughout the Kern region. This would be considered a potentially significant impact. The County contains areas designated by the state as Prime Farmland, Unique Farmland, and Farmland of Statewide Importance. These areas are interspersed throughout urban areas or are located in undeveloped portions of the region. Development of highway, arterial and transit projects proposed under the RTP could potentially result in the disturbance or loss of some of these designated areas. Specifically, new projects involving construction would be most likely to result in impacts to these areas.

- Impact 3.10.6: Growth and development in the County will increase substantially by 2035. The 2011 RTP, by increasing mobility and including transportation measures, influences the pattern of this development. The 2011 RTP's influence on growth contributes to regional cumulatively considerable impacts to land use and would change the intensity of land use in some areas.

- Impact 3.11.1: Grading and construction activities associated with the proposed highway, arterial, and transit projects would intermittently and temporarily generate noise levels above ambient background levels. Noise levels in the immediate vicinity of the construction sites would increase substantially sometimes for extended durations. This would be considered a potentially significant impact.

- Impact 3.12.1: The individual improvement projects could affect overall population, housing and employment growth and dispersion in the region from the predicted regional assumptions. Implementation of the proposed mitigation measures is expected to reduce this to a less-than-significant impact. The individual improvement projects are a specific set of transportation improvements together with the long-range transportation plan developed to meet, among other goals,

the long-term socio-economic conditions of the region. One of the strategic issues is growth. Between the years, 2005 and 2030, residential population is expected to increase by 58 percent. The recent growth trends in housing, population, and jobs within the region are expected to continue.

- Impact 3.12.2: Noise-sensitive land uses could be exposed to noise in excess of normally acceptable noise levels and/or could experience substantial increases in noise as a result of the operation of expanded or new transportation facilities (i.e., increased traffic resulting from new highways, addition of highway lanes, roadways, ramps, and new transit facilities as well as increased use of existing transit facilities, etc.).

- Impact 3.12.3: Cumulative ambient noise levels could increase in the region to exceed normally acceptable noise levels or have substantial increases in noise as a result of the operation of expanded or new transportation facilities (i.e., increased traffic resulting from new highways, addition of highway lanes, roadways, ramps, and new use of new transit facilities as well as increased use of existing transit facilities, etc.).

- Impact 3.13.1: The Project could affect overall population, housing and employment growth and dispersion in the region from the predicted regional assumptions. Implementation of the proposed mitigation measures is expected to reduce this to a less than significant impact. The Project is a specific set of transportation improvements together with the long-range transportation plan developed to meet, among other goals, the long-term socio-economic conditions of the region. One of the strategic issues is growth. Between the years, 2010 and 2035, residential population is expected to increase by 56 percent. The recent growth trends in housing, population, and jobs within the region are expected to continue.

- Impact 3.12.2: The Project has the potential to disrupt or divide a community by separating community facilities, restricting community access and eliminating community amenities.

- Impact 3.12.3: Growth and development in the County will increase substantially by 2035. The 2011 RTP, by increasing mobility and including transportation measures, influences the pattern of this development. The 2011 RTP's influence on growth contributes to regional cumulatively considerable impacts to population, housing and employment and would change the intensity of land use in some areas.

- Impact 3.13.5: Growth and development in the County will increase substantially by 2035. The 2011 RTP, by increasing mobility and including transportation measures, influences the pattern of this development. The 2011 RTP's influence on growth contributes to regional cumulatively considerable impacts to police and fire and emergency services, solid waste services, and other public services in the County.

- Impact 3.14.1: The list of deficient facilities along the Regionally Significant Roads System with and without the Project indicates that when the individual improvement project improvements are made to the regionally significant street and highway system, LOS conditions within the Kern region will significantly improve. Capacity increasing projects that would improve these deficient levels of service are not included in the Project; however even with mitigation, the 2035 levels of service would still include a number of segments that will operate at deficient levels or at LOS E and F.

OVERRIDING CONSIDERATIONS

Kern COG is required to prepare this Statement of Overriding Considerations to explain the reasons for approving the2011 RTP, despite the unavoidable impacts identified in the EIR and Findings of Fact (as per Section 15093 of the State CEQA Guidelines). In preparing this Statement, Kern COG has balanced the benefits of the Proposed Plan Option against its unavoidable environmental risks. Kern COG finds that the unavoidable significant adverse effects of the individual improvement projects are overridden by the benefits of those projects and the considerations described below. Kern COG, therefore, makes and adopts the following Overriding Considerations:

- The requirement for updates to the RTP every four (4) years, which provides for the identification of transportation modes to address population and employment growth, is required by State Law and sound local planning practice, and is an overriding concern.

- The specific need to provide necessary, feasible and sustainable transportation system improvements within the region is an overriding concern.

- The need to provide choice in the availability of transportation modes for County residents as a means to avoid significant delay and congestion, which may indirectly harm businesses and residents that depend upon a viable transportation system, is an overriding concern.

- Because there is no alternative other than the "No Build", "No Project" (2011 Regional Transportation Plan), and VMT Reduction Alternatives to converting some prime farmland for expansion of the circulation system, the need for such conversion is an overriding concern.

- While the individual improvement projects will not result in emissions beyond those allowed through the conformity process, and construction and hot spot emission impacts can be mitigated or are not found to be significant, the fact that the Valley continues to be nonattainment for volatile organic compounds, nitrogen oxides, and PM emissions, is an overriding concern.

- Because there is no alternative other than "No Build", "No Project", and VMT Reduction Alternatives to the loss of some biological resources for expansion of the circulation system, the loss of such resources is an overriding concern.

- The 2011 RTP balances the need to preserve valuable agricultural and biological resources with the region's need to provide a viable transportation system to accommodate anticipated population and employment growth and the related increased need for employment opportunities and municipal revenue. This planning balance is an overriding concern.

- Regional benefits associated with implementation of the 2011 RTP (reduced vehicular emissions, reduced congestion, reduced travel time, reduced vehicle miles traveled and improved mobility), will result from the implementation of planned improvement projects, which outweigh the potentially unavoidable localized impacts to land use development that may result from the individual improvement projects.

- Implementation of the 2011 RTP will result in increased unavoidable noise levels as a result of expansion of the planned transportation system, but the specific need to provide necessary, feasible and sustainable transportation system improvements within the region that supports planned growth and development, is an overriding concern.

- Implementation of the 2011 RTP would result in positive impacts on public services; however, long-term maintenance of various transportation modes including streets and highways is an overriding concern.

- Regional and localized benefits associated with implementation of the 2011 RTP (reduced vehicular emissions, reduced congestion, reduced travel time, reduced vehicle miles traveled and improved mobility), that will result from the implementation of planned improvement projects, outweigh the potentially unavoidable impacts associated with individual or localized improvement projects and other projects identified in the Project alternatives. These other alternatives will result in a greater number of Level of Service (LOS) deficiencies and infeasible transportation projects that will not result in further benefits beyond implementation of the 2011 RTP.

Based on substantial evidence in the public record, Kern COG finds that, for the reasons set forth above, the economic, social and other consideration of the individual improvement projects outweigh the unavoidable agricultural, biological, land use/planning, noise, and transportation/circulation impacts identified in the SEIRs. First, the individual improvement projects identified in the 2011 RTP are required to meet travel demand of residents and businesses through to the year 2035. Second, the planned transportation improvements will enhance continued economic growth in the region. Third, the planned improvements will reduce levels of vehicular emissions and LOS deficiencies compared to the other project alternatives. Fourth, appropriate and achievable mitigation measures have been proposed, which are within Kern COG's and its member agencies' jurisdiction to mitigate or avoid the significant environmental effects identified in the SEIRs.

EXHIBIT B - MITIGATION MONITORING PROGRAM

STATUTORY REQUIREMENT

This Mitigation Monitoring Program for the Kern COG 2011 Regional Transportation Plan Environmental Impact Report (EIR) has been developed in accordance with Section 21081.6 of the Public Resources Code, which requires a Lead Agency that approves or carries out a project, where an EIR has identified significant environmental effects, to adopt a reporting or monitoring program. The purpose of this program is to identify the changes to the project, which the Lead Agency has adopted or made a condition of a project approval in order to mitigate or avoid significant effects on the environment. The Kern Council of Governments (Kern COG) is the Lead Agency that must adopt the mitigation monitoring program for the Kern COG 2011 Regional Transportation Plan if the Project is approved.

Section 21069 of the CEQA statutes defines Responsible Agency as a public agency, other than the Lead Agency, which has the responsibility for carrying out or approving a project. Kern COG finds that the implementation of some mitigation measures listed on the following pages of this Final SEIR are not within its jurisdiction, and can and should be implemented and monitored by agencies responsible for implementing individual improvement projects, including but not limited to the following: cities, Counties, Caltrans, transit districts, and other responsible agencies.

CEQA statutes and Guidelines provide direction for clarifying and managing the complex relationships between a Lead Agency (Kern COG) and other agencies with respect to implementing and monitoring mitigation measures. In accordance with CEQA Guidelines Section 15097.d, "each agency has the discretion to choose its own approach to monitoring or reporting; and each agency has its own special expertise." This discretion will be exercised by implementing agencies at the time they undertake any of the individual improvement projects identified in the Draft and Final SEIRs.

Regular review and update of the 2011 Regional Transportation Plan will be conducted by Kern COG, as appropriate. These updates involve a determination of regional transportation and air quality impacts and will require air quality conformity pursuant to the federal Clean Air Act.

ADMINISTRATION OF THE MITIGATION MONITORING PROGRAM

Mitigation measures listed in this Mitigation Monitoring Program will be implemented by one or more responsible or implementing agencies when those agencies undertake individual transportation improvement projects identified in the Regional Transportation Plan.

The Mitigation Monitoring Program consists of the following components:

- Mitigation measures contained in the Draft and Final SEIRs;
- Identification of Responsible Party;
- Description of mitigation measure timing; and
- Identification of monitoring agency.

This Mitigation Monitoring Program shall be maintained in the Kern COG's files for the Kern COG 2011 Regional Transportation Plan.

MITIGATION MEASURES

Aesthetics

3.1 Mitigation

1. All mitigation measures will be included in individual improvement project-level analysis, as appropriate. The implementation agency or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with mitigation measures.

    - Implement design guidelines, local policies, and programs aimed at protecting views of scenic corridors and avoiding visual intrusions; and

    - To the extent feasible, noise barriers that will not degrade or obstruct a scenic view will be constructed. Noise barriers will be well landscaped, complement the natural landscape and be graffiti-resistant.

2. All mitigation measures will be included in individual improvement project-level analysis, as appropriate. The implementation agency or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with mitigation measures.

    - Avoid construction of transportation facilities in state and locally designated scenic highways and vista points; and

    - If transportation facilities are constructed in state and locally designated scenic highways and/or vista points, design, construction, and operation of the transportation facility will be consistent with applicable guidelines and regulations for the preservation of scenic resources along the designated scenic highway.

3. All mitigation measures will be included in individual improvement project-level analysis, as appropriate. The implementation agency or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with mitigation measures.

    - Develop design guidelines for each type of transportation facility that make elements of proposed facilities visually compatible with surrounding areas. Visual guidelines will, at a minimum, include setback buffers, landscaping, color, texture, signage, and lighting criteria. The following methods will be employed whenever possible:

        - Transportation systems will be designed in a manner where the surrounding landscape dominates;
        - Transportation systems will be developed to be compatible with the surrounding environment (i.e., colors and materials of construction material);
        - If exotic vegetation is used, it will be used as screening and landscaping that blends in and complements the natural landscape;
        - Trees bordering highways will remain or be replaced so that clear cutting is not evident; and
        - Grading will blend with the adjacent landforms and topography.

- Project implementation agencies shall design projects to minimize contrasts in scale and massing between the project and surrounding natural forms and development. Project implementation agencies shall design projects to minimize their intrusion into important viewsheds and use contour grading to better match surrounding terrain. To the maximum extent feasible, landscaping along highway corridors shall be designed to add significant natural elements and visual interest to soften the hard-edged, linear travel experience that would otherwise occur.

- Project implementation agencies shall use natural landscaping to minimize contrasts between the project and surrounding areas. Wherever possible, interchanges and transit lines shall be designed at the grade of the surrounding land to limit view blockage. Edges of major cut-and-fill slopes should be contoured to provide a more natural looking finished profile. Project implementation agencies shall replace and renew landscaping to the greatest extent possible along corridors with road widenings, interchange projects, and related improvements. New corridor landscaping shall be designed to respect existing natural and man-made features and to complement the dominant landscaping of surrounding areas.

- Project implementation agencies shall construct sound walls of materials whose color and texture complements the surrounding landscape and development and to the maximum extent feasible, use color, texture, and alternating facades to "break up" large facades and provide visual interest. Where there is room, project sponsors shall landscape the sound walls with plants that screen the sound wall, preferably with either native vegetation or landscaping that complements the dominant landscaping of surrounding areas.

4. All mitigation measures will be included in project-level analysis, as appropriate. The implementation agency or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with mitigation measures.

5. Cumulative Measures

- Mitigation measures identified above should also be implemented as applicable to development projects throughout the region.

- In visually sensitive site areas and prior to project approval, local land use agencies shall apply development standards and guidelines to maintain compatibility with surrounding natural areas, including site coverage, building height and massing, building materials and color, landscaping, site grading, etc.

- Local agencies should develop design guidelines for each type of transportation facility that make light elements of proposed facilities visually compatible with surrounding areas. The following methods will be employed whenever possible:
  - Transportation systems will be designed in a manner where the surrounding landscape dominates;
  - Transportation systems will be developed to be compatible with the surrounding environment; and
  - Lighting devices will be employed such as downward facing light, light shields, and amber lumens.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies. (Caltrans and local agencies).

When Mitigation Measures are to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

Agricultural Resources

3.2 Mitigation

1. The impact on significant agricultural resources will be evaluated as part of the appropriate improvement project-specific environmental review. Mitigation measures will be identified to minimize impacts. Implementation agencies will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with all mitigation measures.

    - Individual projects will be consistent with local land use plans and policies that designate areas for urban land use and preserve agricultural lands that support the economic viability of agricultural activities; and

    - Prior to final approval of each individual improvement project, the implementing agency will conduct the appropriate project-specific environmental review, including consideration of potential land use impacts.

2. The impact on significant agricultural resources will be evaluated as part of the appropriate project-specific environmental review. Mitigation measures will be identified to minimize impacts. Implementation agencies will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with all mitigation measures.

    - Individual projects will be consistent with federal, state, and local policies that preserve agricultural lands and support the economic viability of agricultural activities, as well as policies that provide compensation for property owners if preservation is not feasible;

    - For projects in agricultural areas, implementation agencies will contact the California Department of Conservation and the Agricultural Commissioner's office to identify the location of prime farmlands and lands that support crops considered valuable to the local or regional economy;

    - Prior to final approval of each individual improvement project, the implementing agency will establish conservation easement programs to mitigate impacts to prime farmland;

    - Prior to final approval of each individual improvement project, the implementing agency will avoid impacts to prime farmlands or farmlands that support crops considered valuable to the local or regional economy; and

    - Prior to final approval of each individual improvement project, the implementing agency will encourage enrollments of agricultural lands for counties that have Williamson Act programs.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies. (Caltrans and local agencies).

When Mitigation Measures are to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

Air Quality

3.3 Mitigation

1. All mitigation measures will be included in project-level analysis, as appropriate. The individual improvement project proponent or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with mitigation measures.

    - Implementation agencies will ensure implementation of mitigation measures to reduce PM_{10}, $PM_{2.5}$, and NOx emissions from construction sites, including:

        - Maintain on-site truck loading zones;
        - Configure on-site construction parking to minimize traffic interference and to ensure emergency vehicle access;
        - Provide temporary traffic control during all phases of construction activities to improve traffic flow;
        - Use best efforts to minimize truck idling to not more than two minutes during construction;
        - Apply non-toxic soil stabilizers (according to manufacturers' specifications) to all inactive construction areas;
        - During construction, replace ground cover in disturbed areas as quickly as possible;
        - During construction, enclose, cover, water twice daily or apply non-toxic soil binders (according to manufacturers' specifications) to exposed piles with five percent (5%) or greater silt content and to all unpaved parking or staging areas or unpaved road surfaces;
        - During the period of construction, install wheel washers where vehicles enter and exit unpaved roads onto paved roads, or wash off trucks and any equipment leaving the site each trip;
        - During the period of construction, assure that traffic speeds on all unpaved roads be reduced to fifteen (15) mph or less;
        - Pave all construction access roads at least 100 feet on to the site from permanent roadways; and
        - Cover all haul trucks.

    - Implementation agencies will avoid improvement project designs requiring significant amounts of material, such as excavated soil and construction debris, to be transported from the site to disposal facilities. Construction sites will employ a balanced cut/fill ratio to the extent possible, thus reducing haul-truck trip emissions.

2. At those facilities or intersections near sensitive receptors where carbon monoxide concentrations may exist, the implementing agency will reduce or alleviate these concentrations by improving traffic flows through improved signalization, restriping, addition of traffic lanes, and other improvements identified as part of the environmental review of an individual improvement project.

3. The various TCMs that have been incorporated into the Air District AQAP, ROP Plans, and the SJVAPCD TCM Program, or have been identified as necessary to provide for positive air quality conformity findings, as referenced in the latest Air Quality Conformity Findings for the 2011 RTP and other plans and programs.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies. (Caltrans and local agencies).

When Mitigation Measures are to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

Biotic Resources

3.4 Mitigation

1. All mitigation measures will be included in subsequent individual improvement project-level environmental analysis as appropriate. The individual improvement project proponent or local jurisdiction will be responsible for compliance with the mitigation measures during all phases of construction as appropriate. Kern COG will be provided with documentation of compliance with mitigation measures.

    - Construction and operational Best Management Practices (BMPs) will be identified, installed and maintained in order to prevent silt and other pollutants from entering jurisdictional waters and wetlands thereby degrading or destroying wildlife and/or natural habitat. BMPs may include straw bales and/or mats, temporary sedimentation basins, silt fence, sand bag check dams, dry season construction, etc;

    - Native soils in construction areas will be removed, stockpiled separately, and replaced in those areas where onsite revegetation of the native habitat is planned;

    - Any disturbed natural areas will be replanted with appropriate native vegetation following the completion of construction activities;

    - During the individual improvement project design phase, impacts to jurisdictional waters and wetlands will be minimized to the greatest extent feasible and

    - Individual improvement project proponents will obtain and comply with appropriate regulatory requirements prior to construction.

2. All mitigation measures will be included in subsequent individual improvement project-level environmental analysis as appropriate. The individual improvement project proponent or local jurisdiction will be responsible for compliance with the mitigation measures during all phases of construction as appropriate. Kern COG will be provided with documentation of compliance with mitigation measures.

   - Each proposed individual improvement project will consider the displacement of sensitive habitat, sensitive species, and non-native habitat during the individual improvement project design phase.

   - When avoidance of native vegetation removal is not possible, each transportation project shall replant disturbed areas with commensurate native vegetation of high habitat value adjacent to the project (i.e. as opposed to ornamental vegetation with relatively less habitat value).

   - Focused sensitive plant and wildlife species and non-native habitat surveys will be conducted within suitable habitat to determine the distribution of sensitive species within the biological impact area of the proposed transportation improvement project. Sensitive plant and non-native habitat surveys will be conducted during the appropriate flowering season for sensitive plant species with the potential to occur within the individual improvement project area. In all cases, impacts on special status species and/or their habitat shall be avoided during construction to the extent feasible.

   - If sensitive plant or wildlife species and non-native habitat are identified within the biological impact area, a Biological Resource Management Plan (BRMP) will be developed to address appropriate avoidance and minimization measures. These measures may include seed collection and salvage measures for sensitive plant species and non-native habitat, silt fencing, exclusion fencing and/or appropriate compensation where impacts cannot be fully avoided.

   - Individual transportation projects shall include offsite habitat enhancement or restoration to compensate for unavoidable habitat losses from the project site.

   - Locations of sensitive species, sensitive habitat, and non-native habitat will be mapped and shown on construction drawings and identified as Environmentally Sensitive Areas (ESAs). Prior to construction, these areas will be flagged and/or fenced to prevent unnecessary impacts from machinery and foot traffic.

   - Temporary access roads and staging areas will not be located within areas containing sensitive plant, sensitive wildlife species or non-native habitat wherever feasible, so as to avoid or minimize impacts to these species.

   - Construction activities will be scheduled, as appropriate and feasible, to avoid sensitive times that have a greater likelihood to affect significant resources such as spawning periods for fish, nesting season for birds and/or the rainy season for riparian habitat and sediment/erosion control.

   - All vegetation (including tall grasses) will be removed between August 16 and February 14, if possible, to avoid potential conflicts with nesting birds. If it is not possible to remove vegetation during that time frame, a nest clearance survey will be completed prior to vegetation clearing. Any detected nests will be mapped and provided with an appropriate buffer as recommended by a qualified biologist. Construction activities within the buffer area will not be allowed until after September 15 or until fledglings have abandoned the nest.

- A Worker Awareness Program (environmental education) shall be developed and implemented to inform project workers of their responsibilities in regards to avoiding and minimizing impacts on sensitive biological resources.

- An Environmental Inspector shall be appointed to serve as a contact for issues that may arise concerning implementation of mitigation measures, and to document and report on adherence to these measures.

- A qualified wetland scientist shall review construction drawings as part of each project-specific environmental analysis to determine whether wetlands will be impacted, and if necessary perform a formal wetland delineation. Appropriate state and federal permits shall be obtained, but each project EIR will contain language clearly stating the provisions of such permits, including avoidance measures, restoration procedures, and in the case of permanent impacts compensatory creation or enhancement measures to ensure a no net loss of wetland extent or function and values.

- Sensitive habitats (native vegetative communities identified as rare and/or sensitive by the CDFG) and special-status plant species (including vernal pools) impacted by projects shall be restored and augmented, if impacts are temporary, at a 1.1:1 ratio (compensation acres to impacted acres). Permanent impacts shall be compensated for by creating or restoring habitats at a 3:1 ratio as close as possible to the site of the impact.

- When work is conducted in identified sensitive habitat areas and/or areas of intact native vegetation, construction protocols shall require the salvage of perennial plants and the salvage and stockpile of topsoil (the surface material from 6 to 12 inches deep) and shall be used in restoring native vegetation to all areas of temporary disturbance within the project area.

- If specific project area trees are designated as “Landmark Trees” or “Heritage Trees”, then approval for removals shall be obtained through the appropriate entity, and appropriate mitigation measures shall be developed at that time, to ensure that the trees are replaced. Due to the close proximity of these areas to sensitive wildlife habitats, all mitigation trees will use only locally-collected native species.

- Use resource data to inform transportation decision-making.

- Use watershed, conservation, and recovery plans to identify important environmental considerations for the Kern COG region, such as critical wildlife corridors, the most important areas to protect for sensitive species, and areas with a high concentration of resources.

- Give conservation plans as much weight as General Plans when planning transportation investments.

- Incorporate concepts such as 100 to 200 foot buffers for stream corridors, and identification and improvement of priority culverts that currently restrict wildlife corridors and natural processes of stream and river systems.

- Use parcel maps to identify larger, undivided parcels for ease of acquisition and preservation, and designate areas as potential future mitigation sites.

- Consider the resource, “Eco-logical: An Ecosystem Approach to Developing Infrastructure Projects” (2006) which encourages Federal, State, Tribal and Local partners involved in the infrastructure planning, design, review, and construction to use flexibility in regulatory processes.

- Identify financial mechanisms to fund mitigation, such as development fees, sales tax, or the use of funds from alternative methods to identify and protect critical resource areas.

- Establish conservation easements that connect to and expand existing conservation areas.

- Describe locally-developed measures such as designated open space, measures requiring development set-backs near streams, etc.

- The following list of data resources should be referenced during development of biotic plans and studies for transportation improvement projects:

  - U.S. Fish & Wildlife Service species recovery plans;
  - USDA Natural Resources Conservation Service wetland data;
  - Nature Conservancy data and regional planning documents;
  - California Department of Fish and Game Natural Diversity Database; and
  - Local non-profit and land trust group information.

3. All mitigation measures will be included in subsequent individual improvement project-level environmental analysis as appropriate. The individual improvement project proponent or local jurisdiction will be responsible for compliance with the mitigation measures during all phases of construction as appropriate. Kern COG will be provided with documentation of compliance with mitigation measures.

   The height, spacing, number and type of light fixtures will be selected and installed to minimize intrusive light escaping from the physical boundaries of the site.

   - Road noise minimization methods such as native brush and tree planting adjacent to heavy noise producing transportation facilities or will be incorporated where feasible.

4. All mitigation measures will be included in subsequent individual improvement project-level environmental analysis as appropriate. The individual improvement project proponent or local jurisdiction will be responsible for compliance with the mitigation measures during all phases of construction as appropriate. Kern COG will be provided with documentation of compliance with mitigation measures.

   - During final design, implementing agencies, will design, construct, and maintain terrestrial wildlife crossings in order to minimize barrier effects and habitat fragmentation created by the transportation improvement project.

   - During final design, implementing agencies, will design, construct, and maintain any structure/culvert placed within a stream where endangered or threatened fish occur/may occur. The structure/culvert will not constitute a barrier to upstream or downstream movement of aquatic life, or cause an avoidance reaction by fish that impedes their upstream or downstream movement. This includes, but is not limited to, the supply of water at an appropriate depth for fish migration.

5. All mitigation measures will be included in subsequent individual improvement project-level environmental analysis as appropriate. The individual improvement project proponent or local jurisdiction will be responsible for compliance with the mitigation measures during all phases of construction as appropriate. Kern COG will be provided with documentation of compliance with mitigation measures.

- Construction and operation of the proposed transportation individual improvement project will comply with the requirements of all adopted HCPs and other preserved areas.

6. Siltation Measures:

   - Individual projects near water resources shall implement Best Management Practices (BMPs) at construction sites to minimize erosion and sediment transport from the area. BMPs include encouraging growth of vegetation in disturbed areas, using straw bales or other silt-catching devices, and using settling basins to minimize soil transport.

   - Individual projects shall schedule construction activities to avoid sensitive times for biological resources (e.g. steelhead spawning periods during the winter and spring) and to avoid the rainy season when erosion and sediment transport is increased.

7. The cumulative impacts to biological resources, due to the forecast urban development associated with the 2011 RTP, would be mitigated using the same measures detailed for Impacts 3.4.1 through 3.4.6, in addition to the following measure:

   - Future impacts to biotic resources shall be minimized through cooperation and information sharing between the implementation agency and affected resource agencies.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies. (Caltrans and local agencies).

When Mitigation Measures are to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

Climate Change

3.5 Mitigation

1, 2 The ultimate sources of increased transportation emissions in Kern County are population and employment growth, which will increase with or without projects referenced in the 2011 RTP. Kern COG does not implement land use policy in Kern County; rather, this is under the jurisdiction of the County and the various cities. Decisions about the place, pace, and scale of growth and development are reflected in the general plans and project approvals adopted by the local agencies. The 2011 RTP is designed to complement, rather than change, the plans adopted by the local agencies. Thus, the ultimate effect of the 2011 RTP on transportation emissions is not to increase the amount of travel per se, but rather to influence where and how travel occurs within and through the County.

As of the writing of this Draft Subsequent EIR, the agencies with jurisdiction over air quality regulation and GHG emissions (CARB and the San Joaquin Valley Air Pollution Control District) have not established regulations, guidance, methodologies, significance thresholds, standards, CEQA protocols or mitigation measures that specify the type of analysis, or mitigation measures, that can be included in a program EIR, or other CEQA document. In addition, no emission inventories or emission baselines have been established that would allow for an appropriate analysis to evaluate an existing setting and impact analysis for the proposed implementation of the Kern County RTP because of climate change. Kern COG adheres to the rules and guidelines currently in place at the local, State and federal level, and will adhere to any future regulations regarding global warming resulting from the legislative approval of AB 32 and AB 1493, when available.

A number of mitigation measures are included in Section 3.3 of the Draft EIR to address criteria emissions. Public transit has been enhanced in the 2011 RTP compared to the current RTP (adopted in 2007). Such improvements will help mitigate expected increases in emissions resulting from increased population and employment and the impact of planned growth and development on the regional transportation system. The RTP also includes references to a number of studies. The Plan contains a number of projects and significant funding for various forms of transportation in addition to streets and highways. Kern COG is in the process of developing a Regional Blueprint for the year 2050. Kern COG is coordinating development of the Blueprint with the other seven counties within the San Joaquin Valley. All eight counties are located in the same Air Basin (San Joaquin Valley Air Basin) and received the grant for Blueprint development from the State of California. The Blueprint programs in California are designed to address the three "E"s of Regional Blueprint Planning; that is, Energy Efficiency, the Environment, and Economic Development. The Regional Blueprint will identify a preferred land use scenario and transportation system for Kern County considering the application of alternative growth strategies. The Plan identifies a vision, values, goals, objectives, and implementing strategies that can be planned by Kern COG and implemented by local agencies within the County to reduce vehicle trips, vehicle miles traveled (VMT), and support increased walkability, passenger rail, public transit systems, and bicycling.

Further, public transit over the next 20 years has been enhanced in the 2011 RTP over existing conditions and even when compared to the current RTP (adopted in 2007). Such improvements will help mitigate expected increases in emissions resulting from increased population and employment and the impact of planned growth and development on the regional transportation system. Furthermore, the RTP includes references to a number of studies (some of which are described above). The Project improvements are expected to reduce VMT and vehicle trips and as a result, GHG emissions.

Kern COG cannot require that local agencies, Caltrans, the Air District or other agencies that use diesel-powered vehicles and equipment apply retrofit emission control devices, such as diesel oxidation catalysts and diesel particulate filters verified by CARB. Kern COG also cannot require that the same agencies use alternative forms of cement and asphalt that have lower GHG emissions. It is recommended however, that responsible agencies (local agencies, the Air District, Caltrans, and others) consider the implementation of such measures during individual project development and construction.

Both Kern COG and responsible agencies implementing projects outlined in the 2011 RTP will be required to adhere to any future applicable mandatory regulations regarding global warming resulting from the passage of AB 32 and AB 1493, but the exact character of such future implementing strategies is not known at this time. Kern COG and the local agencies will quantify GHG emissions consistent with Guidelines and requirements developed by CARB. Once the Guidelines are available, Kern COG will address GHG emissions and global warming impacts of projects contained in the 2011 RTP.

The following mitigation measures are intended to address regional and project-level impacts, as appropriate. For project-level impacts, the individual improvement project proponent or local jurisdiction will be responsible for ensuring adherence to the mitigation measures.

- Transportation

  - Work with member agencies to increase the number of Alternative Fuel Vehicles (AFV) in municipally owned vehicles;
  - Funding retrofit, repower or replacement of diesel vehicles with funding from applicable federal, state and local sources;
  - Encouragement of technology, such as electrification, to provide alternatives to operating the heating and air conditioning, refrigeration units while idling at distribution centers, warehouses, truck shops and other facilities where diesel trucks may reside overnight or for periods of several hours;
  - Subsidize carpool and vanpool programs that originate in Kern County'
  - Support efforts that further analyze GHG emission contributions from goods movement through transportation corridors, trucking and other relevant freight movement practices;
  - Support the use of grants, loans and incentives to assist local governments with the implementation of climate change response activities and GHG reduction strategies;
  - Support state legislation to provide incentive funds to local governments to develop and implement GHG reduction programs; and
  - Support efforts that will enable cities and counties to purchase new vehicles for local fleets that conform to state purchasing standards, are fuel efficient, low emission or use alternative fuels.

- Land Use (Blueprint)

  - Develop land use patterns, which encourage people to walk, bicycle, or use public transit for a significant number of their daily trips;
    - Use circulation elements of general plans to ensure that development is consistent and well connected by alternative transportation modes (as required by AB 1358 effective January 1, 2011);
    - Adopt transit-oriented or pedestrian-oriented design strategies and select areas appropriate for these designs in the general plan;
    - Support higher density development in proximity to commonly used services and transportation facilities, such as transit centers;
    - Promote a balance of housing, shopping, and other amenities on the urban fringe and outlying communities that service strategic rural employment areas such as military bases, prisons, wind/alternative energy areas, oil production/mining, agriculture/ranching, food processing, warehouse distribution/intermodal centers, travel centers, recreation areas, etc.;
    - Promote affordable housing affordable relative to average wages in the community to reduce commute distances;
    - Promote reduced travel by providing electric vehicles, bike, pedestrian and equestrian paths and park-and-ride lots;
    - Promote phasing of new housing developments that reduce the need for long distance commutes to work and retail centers while construction is underway;
    - Provide subsidies for alternative transportation such as vanpools and transit until such time as ridership is at a level that supports the minimum transit fare box subsidy requirements;
    - In transit-oriented areas, provide for express transit or bus rapid transit service and circulator feeder systems. Service should plan for direct access to the Bakersfield High Speed Rail station;
    - In transit-oriented areas, reduce parking requirements and provide car/vanpool parking areas;

  - In transit oriented areas include a transit pass/subsidy as part of the housing rental agreement, commercial rent agreement, employer benefit package, or monthly housing payment of new developments to ensure that express transit service has sufficient ridership to meet the minimum fare box requirement. and
  - Space walkable/bikeable transit centers a minimum of 1 – 3 miles apart to ensure that travel times compete with passenger vehicle travel times.
- In urban areas, develop in a compact, efficient form to reduce vehicle miles traveled and to improve the efficiency of alternatives to the automobile:
  - Use the control of public services to direct development to the most appropriate locations; and
  - Promote infill of vacant land and redevelopment sites.
- Encourage project site designs and subdivision street and lot designs that support walking, bicycling, and transit use:
  - Adopt design guidelines and standards promoting plans that encourage alternative transportation modes; and
  - Require certain sites to be created to allow convenient access by transit, bicycle, and walking.
- Accommodate projected population growth by identifying appropriate areas for urban and rural growth, economic development, and multi-modal transportation corridors that support smart growth principles;
- Promote 'downtowns' or 'urban centers' as the commercial, financial and social centers of communities. Promote higher density housing located adjacent to and within convenient walking distance to downtown, urban mixed use centers and/or transit corridors;
- Support and encourage policies and plans which direct growth to well planned neighborhoods and communities;
- Encourage the design and development of an effective transportation system that integrates all modes into a seamless, reliable, cost-efficient system, including intelligent transportation solutions and high tech communication options;
- Support intermodal travel including park-and-ride, rideshare, bicycle, rail and transit programs;
- Support increased mass transit connectivity and accessibility;
- Promote reduction of vehicle miles traveled;
- Promote the achievement and maintenance of State and Federal standards for air quality;
- Encourage General Plan, Community Plan and Specific Plan updates to include air quality elements, Greenhouse Gas Emission Reduction Plans and mitigation measures that reduce air pollution and vehicle miles traveled from existing and new development;
- Encourage the reduction of air pollution impacts from new developments;
- Help establish baseline GHG emission rates for municipalities; and
- Promote landscaping strategies that will reduce GHG.

◆ Energy

- Promote the use of LED technology or comparable energy-efficient technology for traffic lights, rail signals and other features compatible with LED or comparable energy-efficient technologies;
- Support the use of procurement practices that promote the use of energy efficient products and equipment;
- Support and coordinate efforts that address strategies to reduce greenhouse gases into planning efforts; and
- Promote energy efficiency, solar energy production and other methods of reducing GHG production.

- Emission Reduction Plan

  - Prior to or in conjunction with the adoption of the proposed 2014 RTP, Kern COG and/or its member agencies will develop a GHG Emissions Reduction Plan that includes the following:
    - General discussion of the potential impacts that GCC poses to the Kern County region, with particular focus on potential impacts related to RTP facilities, to the extent that such information is available;
    - A baseline inventory of total GHG emissions directly and indirectly from transportation in the County that currently exist, and review of potential targets and timelines for achieving GHG reductions;
    - Development of feasible GHG emissions reduction measures and strategies to achieve reductions in RTP GHG emissions. Such reduction measures may include construction of new transportation projects, modification of existing facilities or services, incentive or funding programs, pricing strategies, regulations or any other actions that reduce GHG emissions associated with RTP activities; and
    - State protocols and GHG emissions inventory mechanisms are necessary tools to track and monitor GHG emissions at the local level. Kern COG and member agencies must determine, in cooperation with the state, the solutions that will best minimize its potential risks and maximize its potential benefits.

- Intelligent Transportation Systems

  - Develop an Intelligent Transportation Systems strategy to implement the Integrated Performance Management Systems Network that will:
    - Interconnect the region's local transportation management centers, including the use of cameras, and computer hardware and software to detect and clear accidents;
    - Use technology to improve traffic signal timing in order to optimize traffic flow and transit service; and
    - Involve new equipment to improve on-time transit performance and provide real-time transit information at stops and stations.

- Alternative Fuel Vehicle and Infrastructure Toolkit for Local Governments

  - Kern COG will develop an Alternative Fuel Vehicle (AFV) and Infrastructure Toolkit for member agencies that will contain best practices related to ordinances, analytical tools, financing opportunities, codes, and standards related to reducing GHG emissions. Kern COG will identify the alternative fuel vehicle(s) (e.g. neighborhood electric vehicles) and alternative fuel infrastructure with the potential to result in the greatest GHG emission reductions. Kern COG will conduct a public education program for local governments and other public agencies, as appropriate to encourage the use of alternative fuel vehicles and infrastructure; and
  - Kern COG will work with its member agencies to increase the number of AFVs (i.e., vehicles not powered strictly by gasoline or diesel fuel) both in municipally owned vehicles, as well as those owned by franchisees of these cities, such as trash haulers, green waste haulers, street sweepers, and curbside recyclable haulers. Such AFVs shall have GHG emissions at least 10 percent lower than comparable gasoline- or diesel-powered vehicles. The Alternative Fuel Vehicle and Infrastructure Toolkit described above will include best practices strategies to aid in the transformation of municipally owned or contracted fleets, including vehicle fleets operated and/or funded, at least in part by Kern COG.

- Transportation Pricing Policy (GET Long Range Transit Study)

  Kern COG will prepare an analysis on the impacts and the viability of using pricing policies with the transit system and selected portions of the road network to encourage people to drive less and use transit, walking, and bicycling modes more. This study will identify strategies to reduce GHG emissions that will include, but are not limited to, free or reduced transit fares during "spare the air" days; fare-free zones on the transit system; transit vouchers; days on which transit is free; congestion pricing options for portions of the road system, such as tolls on freeways and highways; and congestion-pricing to enter certain high-traffic areas served by public transit (e.g. downtown areas). Kern COG shall adopt a transportation pricing policy based upon these strategies, and shall conduct seminars with local government staff, planning commissioners and elected officials and members of the private development, planning, engineering and design communities to disseminate these strategies.

- Public Education Program on Individual Transportation Behavior and Climate Change

  In conjunction with key partners such as local air districts, public utility providers, area chambers of commerce and others, Kern COG will create a public information program to educate the public about the connection between individual transportation behavior and global climate change, including transportation behavior modifications the public can make to reduce their GHG emissions over time. Kern COG shall include information on its website that is focused on global climate change. The website shall identify actions the public can take to reduce their carbon footprint, and provide web links to sources of information designed to promote alternative mode use (carpools, vanpools, public transit, bicycling, walking, telecommuting) and other travel demand management strategies.

- Workshop on Global Climate Change for Local Government Officials and Create GHG Emissions Reduction Strategies Toolkit

  - Kern COG will provide funding for a workshop on global climate change for local government officials that will focus on practical techniques that local governments can implement to reduce greenhouse gas emissions at the city and county level. Workshop topics shall include, but are not limited to the following:
    - The basic science behind climate change and its effects on the Kern County Region;
    - Addressing the California Environmental Quality Act (CEQA) and the effects of AB 32;
    - What cities and counties are doing to address climate change and CEQA;
    - Cost effective actions cities can take to reduce greenhouse emissions; and
    - Actions being taken in the Kern County area to advance and support innovative "green" business.

  - Kern Cog in conjunction with other key partners, shall produce a toolkit for local governments to use to take effective actions to reduce greenhouse gas emissions over time. The toolkit will incorporate recommendations by the workshop participants to identify which issues are important for the region and the tools and resources they would like to have available to reduce greenhouse emissions .

- Establish a Baseline for Kern's Own GHG Impacts

  - Starting in calendar year 2011, Kern COG shall measure and record the GHG emissions associated with its own operations in an accurate manner and in a format consistent with the California Climate Action Registry's own reporting protocol in order to establish a baseline against which any future GHG reductions may be applied. The report shall be independently audited by a State and Registry approved certifier. The report shall include the following elements:

- Indirect emissions from electricity and natural gas use;
- Direct emissions from mobile source combustion (agency vehicles);
- Indirect emissions from business-related employee air travel;
- Direct and Indirect emissions from employee commuting; and
- Indirect emissions associated with Kern COG purchasing practices.

➢ Kern COG shall continue to report on its own GHG emissions consistent with this format in subsequent years and track its progress in reducing emissions.

♦ Project level environmental documents shall analyze construction and maintenance Greenhouse Gas (GHG) emissions.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies. (Caltrans and local agencies).

When Mitigation Measures are to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

Cultural Resources

3.6 Mitigation

1. Individual improvement project-specific impacts on cultural resources will be identified at the earliest planning stages of the individual improvement project. Since avoidance is the preferred means for mitigating impacts on cultural resources, cultural resource specialists should be included on the individual improvement project planning teams and records searches, background research, Native American consultations, field inventories, and other investigations should be performed during initial routing studies or other comparable planning activities. To comply with state and federal laws and regulations governing cultural resources, the following specific activities will be completed prior to certification of the subsequent or individual improvement project EIR/EIS or other CEQA/NEPA documents.

♦ Records Searches

For each individual improvement project, a records search will be performed at the Southern San Joaquin Valley Information Center of the California Historical Resources Information System, housed at California State University, Bakersfield. Resources to be examined at the Information Center include site location and survey coverage base maps, listings on the National Register of Historic Places and California Register of Historic Resources, State Historic Property Data Files, National Register of Determined Eligible Properties, California Historical Landmarks, California Points of Historic Interest, and California Office of Historic Preservation Archaeological Determinations of Eligibility. As appropriate for each individual improvement project, background research will also be conducted at city and county historical societies, libraries,

museums, and other institutions that may have relevant information on the nature and location of cultural resources within the individual improvement project area.

- Native American Consultation

  For each individual improvement project, contact the Native American Heritage Commission (NAHC) in Sacramento and request a search of their Sacred Lands File for information on the individual improvement project area. The NAHC will also supply a list of Native American representatives whose traditional lands encompassed the individual improvement project area. Those included on the NAHC consultant list will be contacted by letter and follow-up telephone calls to request information about the study area, and to provide them the opportunity to articulate their views on possible impacts of the individual improvement project and appropriate mitigation measures.

- Paleontological Research

  Conduct a records and literature search at the appropriate institutions, review geological maps for potential fossiliferous formations, and prepare an initial assessment of paleontological resource sensitivity in the individual improvement project area. Compile a list of relevant sites and known fossiliferous formations, and assess each individual improvement project's potential to impact paleontologically significant resources.

- Archaeological Survey

  For each individual improvement project, systematically traverse unsurveyed areas on foot using transects spaced 15-20 meters apart. Previously surveyed areas, as indicated by the Information Center survey coverage base maps, will be resurveyed if prior surveys were completed more than ten years previously or if survey coverage was insufficient due to conditions at the time. Historical or prehistoric archaeological sites discovered within or immediately adjacent to the survey area will be documented according to current professional standards on the appropriate Department of Parks and Recreation forms (DPR-523). Previously recorded sites will be revisited, and their documentation will be updated to the current formats and standards. All sites, features, and isolates will be photographed using 35-millimeter and/or digital pictures, and their locations plotted on the appropriate USGS topographic 7.5' quadrangle. Planimetric site sketch maps will be prepared for each archaeological site, depicting site boundaries, concentrations, features, diagnostic artifacts, and areas of disturbance. Site locations will also be plotted using a Global Positioning System.

- Architectural Survey

  Buildings, structures, objects, linear cultural features, and other non-archaeological properties will be inventoried to current professional standards and recorded on the appropriate Department of Parks and Recreation forms (DPR-523). Documentation on previously recorded sites will be updated to the current formats and standards. All resources will be photographed using 35-millimeter and/or digital pictures, and their locations plotted on the appropriate USGS topographic 7.5' quadrangle.

- Significance Evaluation and Impact Assessment

  Any cultural resources that will be directly impacted by a proposed individual improvement project will be evaluated for significance according to the criteria of the National Register and/or California Register, as appropriate. If the boundaries of the resource or its spatial relationship to the impact area are unclear, then boundary definition using more detailed surface and subsurface investigations may be required.

Significance evaluations may require additional archival and background research, additional field documentation, or other studies. Evaluation of archaeological properties may require test excavations, backhoe trenching, or other forms of subsurface investigation; laboratory processing and analysis of recovered remains; and a variety of special technical studies. These evaluations will define the qualities of the resource that make it significant and assess site integrity as a means for judging the nature and extent of individual improvement project impacts. Significance evaluations and impact assessments will be performed by appropriately qualified specialists meeting the Secretary of Interior's Professional Qualifications Standards (FR 190: 44740–44741). Artifacts and other remains collected from the field, along with field records and other documentation, will be curated at the Museum of Anthropology, California State University, Bakersfield, or another institution capable of providing secure, long-term storage, care, and access to the public.

- Technical Report/EIR Sections

Prepare a technical report documenting the results of the records search, background research, Native American consultation, paleontological research, field surveys, resource evaluations, and other studies. Because these reports may detail locations within the individual improvement project areas known to be culturally and paleontologically sensitive, they will be confidential technical appendices to each EIR/EIS. Summary sections included in the body of the EIR/EIS will not disclose sensitive site location information. The confidential technical report and EIR/EIS sections will discuss the importance of historical, archaeological, and paleontological resources identified during the study, identify the potential for significant impacts, and discuss adequate and feasible mitigation measures. The reports will adhere to professional standards outlined by the State Office of Historic Preservation in *Archaeological Resource Management Reports (ARMR): Recommended Contents and Format* (Jackson 1990).

- Agency Consultation

For federally entailed projects, the lead federal agency must consult with the State Historic Preservation Officer (SHPO) regarding the identification, evaluation, and subsequent mitigative treatment of cultural resources. The SHPO does not play a role in the CEQA process unless state lands, state-owned properties, or unusually important resources are involved. For federal projects, the SHPO is asked to review and concur with the federal agency's findings regarding the significance of resources and the appropriate treatment. Initial consultation with the SHPO should occur early in the planning process, with follow-on consultation and review at each stage.

If the studies described above determine that significant cultural resources will be affected by the proposed individual improvement project, then additional impact mitigation may be required if the individual improvement project cannot be redesigned to avoid the resource. Impact mitigation may take a variety of forms depending on the nature of the site and the nature and extent impacts. As noted above, site avoidance is the preferred mitigation measure. If resources cannot be avoided entirely, portions of the resources outside the impact area may be preserved in an exclusion zone—a fenced area where construction equipment and personnel are not permitted. Together, avoidance and use of exclusion zones ensures the maximum *in-situ* preservation of significant cultural resources.

Where avoidance is infeasible and significant cultural resources are jeopardized by a individual improvement project, one or a combination of the following measures will be implemented:

- Data recovery excavation;
- Additional analysis of existing collections;

- Additional archival/historical research;
- Photographic documentation; and
- Archaeological monitoring during construction, followed by data recovery excavation or other appropriate measures if significant archaeological remains are exposed.

Final decisions regarding impact mitigation will be made in consultation among the individual improvement project proponent, regulatory agencies, technical specialists, and other interested parties. If data recovery excavation is the recommended mitigation, then the EIR/EIS must include a data recovery plan. Data recovery will be supervised by appropriately qualified specialists meeting the Secretary of Interior's Professional Qualifications Standards (FR 190: 44740–44741). Artifacts and other remains collected from the field, along with field records and other documentation, will be curated at the Museum of Anthropology, California State University, Bakersfield, or another institution capable of providing secure, long-term storage, care, and access to the public.

It should be noted that photographic documentation or other records of historical buildings or structures prepared to the standards of the Historic American Building Survey or Historic American Engineering Record (commonly referred to as HABS/HAER standards) may constitute appropriate treatment of effects according to federal regulations, but may not mitigate individual improvement project impacts to a level of less than significant according to CEQA standards and its defining case law.

2. When a construction activity could significantly disturb soils or geologic formations in areas identified as having a moderate to high potential to support paleontological resources, a qualified researcher must be stationed on-site to observe during excavation operations and recover scientifically valuable specimens. As part of this mitigation, the following actions should be taken:

   - A certified paleontologist shall be retained (or required to be retained) by the project implementing agency prior to construction to establish procedures for surveillance and the preconstruction salvage of exposed resources if fossil bearing sediments have the potential to be impacted.
   - The monitor shall provide preconstruction coordination with contractors, oversee original cutting in previously undisturbed areas of sensitive formations, halt or redirect construction activities as appropriate to allow recovery of newly discovered fossil remains, and oversee fossil salvage operations and reporting.
   - This measure shall be placed as a condition on all plans where excavation and earthmoving activity is proposed in a geologic unit having a moderate or high potential for containing fossils.
   - Excavations of paleontological resources should be overseen by the qualified paleontologist and the paleontological resources given to a local agency, or other applicable institution, where they could be displayed or used for research.

   Where practicable, routes and project designs that would permanently alter unique geologic features shall be avoided.

3. The cumulative impacts to cultural resources, due to the forecast growth and development associated with the 2011 RTP, would be mitigated using the same measures detailed for Impacts 3.6.1 and 3.6.2, in addition to the following measure.

   - Future impacts to cultural resources shall be minimized through cooperation and information sharing between the implementation agency and affected resource agencies.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies. (Caltrans and local agencies).

When Mitigation Measures are to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

Geology/Soils

3.7 Mitigation

1. Seismic Mitigation

   - Individual improvement project structures will be built by responsible agencies to the seismic standards contained in the most recent edition of the Uniform Building Code (UBC).
   - Implementing agencies will ensure that improvement projects located within or across active fault zones comply with design requirements, published by the CGS, as well as local, regional, state, and federal design criteria for construction of projects in seismic areas.

   The implementing agencies will guarantee that geotechnical analysis is conducted within construction areas to establish soil types and local faulting prior to individual improvement project design preparation.

2. Slope failure, long-term erosion, and unique geologic features mitigation:

   - The implementing agencies will ensure that individual improvement project designs provide adequate slope drainage and appropriate landscaping to minimize the occurrence of slope instability and erosion.
   - Design features will include measures to reduce erosion from storm water.
   - Road cuts will be designed to maximize the potential for revegetation.
   - Implementing agencies will ensure that projects avoid landslide areas and potentially unstable slopes wherever feasible.
   - Where practicable, routes and individual improvement project designs that would permanently alter unique geologic features will be avoided.

3. Subsidence mitigation:

   - Implementing agencies will ensure that geotechnical investigations are conducted by a qualified geologist to identify the potential for subsidence and expansive soils.

   - Recommended corrective measures, such as structural reinforcement and replacing soil with engineered fill, will be implemented in individual improvement project designs.

   - Implementing agencies will ensure that, prior to preparing individual improvement project designs, new and abandoned wells are identified within construction areas to ensure the stability of nearby soils.

4. Seismic mitigation:

   - Implementing agencies shall ensure that projects are designed in accordance with county and city code requirements for seismic ground shaking. The design of projects shall consider seismicity of the site, soil response at the site, and dynamic characteristics of the structure, in compliance with the appropriate California Building Code and State of California design standards for construction in or near fault zones, as well as all standard design, grading, and construction practices in order to avoid or reduce geologic hazards.

   - Implementing agencies shall ensure that projects located within or across Alquist- Priolo Zones comply with design requirements provided in Special Publication 117, published by the California Geological Survey, as well as relevant local, regional, state, and federal design criteria for construction in seismic areas.

   - The project implementing agencies shall ensure that geotechnical analyses from qualified geotechnical experts are conducted within construction areas to ascertain soil types and local faulting prior to preparation of project designs. These investigations would identify areas of potential failure and recommend remedial geotechnical measures to eliminate any problems.

5. Adverse soil mitigation:

   - Improvement projects with significant cuts or fill will include a geotechnical investigation to identify adverse soil conditions and develop recommendations for design and construction that would limit the effects of adverse soil and bedrock conditions.

   - Cut and fill plans will be prepared for all improvement projects where cut and fill will be reburied, so that all fill materials are properly designed, placed, and compacted.

   - Preparation of a detailed erosion control plan will be prepared to limit the effects of soil erosion and water degradation during improvement project construction, in accordance with permit conditions and requirements of the State Water Resources Control Board's Best Management Practices (BMPs), or equally effective measures will be employed.

6. State-owned and State mineral-reserved land mitigation:

   - Where possible, improvement projects will be designed by responsible agencies to limit potential impacts on State-owned or State mineral-reserved lands.

7. Cumulative mitigation:

   Mitigation measures 3.7.1 through 3.7.6 would be applied to this impact in addition to the following measure:

   - Future impacts to geologic resources shall be minimized through cooperation and information sharing between the implementation agency and affected resource agencies.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies. (Caltrans and local agencies).

When Mitigation Measures are to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

Hazards & Hazardous Materials

3.8 Mitigation

1. The following mitigation measure is included to ensure compliance with applicable regulations.

   - The implementation agency shall comply with all applicable laws, regulations, and health and safety standards set forth by federal, state, and local authorities that regulate the proper handling of such materials and their containers to the routine transport, use, and disposal of hazardous materials does not create a significant hazard to the public or the environment.

2. Release of hazardous materials mitigation:

   - Implementing agencies shall encourage the USDOT, the Office of Emergency Services, and Caltrans to continue to conduct driver safety training programs and encourage the private sector to continue conducting driver safety training.
   - Implementing agencies shall encourage the USDOT and the CHP to continue to enforce speed limits and existing regulations governing goods movement and hazardous materials transportation.

3. Contaminated sites mitigation:

   - Prior to approval of any RTP project, the project implementation agency shall consult all known databases of contaminated sites and undertake a standard Phase 1 Environmental Site Assessment in the process of planning, environmental clearance, and construction for projects included in the 2011 RTP. If contamination is found the implementing agency shall coordinate clean up and/or maintenance activities.

- Where contaminated sites are identified, the project implementation agency shall develop appropriate mitigation measures to assure that worker and public exposure is minimized to an acceptable level and to prevent any further environmental contamination as a result of construction.

- Local agencies should contact the Chevron Environmental Management Company (CEMC) to determine whether an improvement project may be in the vicinity of the Tidewater Oil Company or Standard Oil Company historical pipeline alignments. A map of the alignments is provided in Appendix B of this SEIR.

4. Cumulative mitigation:

- Mitigation Measures 3.8.1 through 3.8.3 as implemented by responsible agencies and private developers would address this impact.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies. (Caltrans and local agencies).

When Mitigation Measures are to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

Hydrology/Water Quality

3.9 Mitigation

1. Water quality mitigation::

- Improvement projects along existing facilities will include upgrades to storm water drainage facilities to accommodate increased runoff volumes. These upgrades may include the construction of detention basins or structures that will delay peak flows and reduce velocity.

2. Groundwater mitigation:

- Transportation network improvements will comply with local, state and federal floodplain regulations. Proposed transportation improvements will be engineered by responsible agencies to accommodate storm drainage flow.

- Responsible agencies should ensure that operational best management practices for street cleaning, litter control, and catch basin cleaning are provided to prevent water quality degradation. Responsible agencies implementing projects requiring continual water removal facilities will provide monitoring systems including long-term administrative procedures to ensure proper operations for the life of the improvement project.

3. Flood hazards mitigation:

   - Prior to construction, and when a potential drainage issue is known, a drainage study will be conducted by responsible agencies for new capacity-increasing projects. Drainage systems will be designed to maximize the use of detention basins, vegetated areas, and velocity dissipaters to reduce peak flows where possible. Transportation improvements will comply with federal, state and local regulations regarding storm water management. State-owned freeways must comply with Storm Water Discharge NPDES permit for Caltrans facilities.

   - Responsible agencies will ensure that new facilities include water quality control features such as drainage channels, detention basins, and vegetated buffers to prevent pollution of adjacent water resources by runoff.

   - Letters of Map Revision (LOMR) will be prepared and submitted to FEMA (when applicable) by responsible agencies where construction would occur within 100-year floodplains. The LOMR will include revised local base flood elevations for projects constructed within flood-prone areas.

4. Urban and construction runoff mitigation:

   - Improvement projects along existing facilities will include upgrades to storm water drainage facilities to accommodate increased runoff volumes. These upgrades may include the construction of detention basins or structures that will delay peak flows and reduce velocity.

5. Water quality, stormwater infiltration, groundwater recharge, flood hazards, wastewater treatment services, and water demand mitigation: Mitigation Measures 3.9.1 through 3.9.4 shall be applied to all development projects, as feasible, in addition to the following measures:

   - Local governments should encourage Low Impact Development and natural spaces that reduce, treat, infiltrate and manage stormwater runoff flows in all new developments.

   - Local governments should implement green infrastructure and water-related green building practices through incentives and ordinances. Green building resources include the U.S. Green Building Council's Leadership in Energy and Environmental Design, Green Point Rated Homes, and the California Green Builder Program.

   - Local governments should integrate water resources planning with existing greening and revitalization initiatives, such as street greening, tree planting, development and restoration of public parks, and parking lot conversions, to maximize benefits and share costs.

   - Developers, local governments, and water agencies should maximize permeable surface area in existing urbanized areas to protect water quality, reduce flooding, allow for groundwater recharge, and preserve wildlife habitat. New impervious surfaces should be minimized to the greatest extent possible, including the use of in-lieu fees and off-site mitigation.

   - Future impacts to water quality shall be avoided through cooperative planning, information sharing, and comprehensive pollution control measure development.

   - Local jurisdictions and water agencies are encouraged to continue regional-scale planning for improved stormwater management and groundwater recharge. Future adverse impacts shall be avoided through cooperative planning, information sharing, and comprehensive implementation efforts.

- Local governments should prevent development in flood hazard areas that do not have appropriate protections, especially in alluvial fan areas of the region.

- Local jurisdictions should encourage new development and industry to locate in those service areas with existing wastewater infrastructure and treatment capacity, making greater use of those facilities prior to incurring new infrastructure costs.

- Wastewater treatment agencies are encouraged to have expansion plans, approvals and financing in place once their facilities are operating at 80 percent of capacity.

- Local jurisdictions should promote reduced wastewater system demand by: designing wastewater systems to minimize inflow and increase upstream treatment and infiltration to the extent feasible, reducing overall source water generation by domestic and industrial users, deferring development approvals for industries that generate high volumes of wastewater until wastewater agencies have expanded capacity.

- Project developers and agencies should consider potential climate change hydrology and attendant impacts on available water supplies and reliability in the process of creating or modifying systems to manage water resources for both year round use and ecosystem health.

- Local water agencies should continue to evaluate future water demands and establish the necessary supply and infrastructure to meet that demand.

- Developers, local governments, and water agencies should include conjunctive use as a water management strategy when feasible.

- Developers and local governments should reduce exterior uses of water in public areas, and should promote reductions in private homes and businesses, by shifting to drought-tolerant native landscape plantings (xeriscaping), using weather-based irrigation systems, educating other public agencies about water use, and installing related water pricing incentives.

- Future impacts to water supply shall be minimized through cooperation, information sharing, and program development.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies. (Caltrans and local agencies).

When Mitigation Measures are to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

Land Use/Planning

3.10 Mitigation

1. The impact on significant agricultural resources will be evaluated as part of the appropriate improvement project-specific environmental review. Mitigation measures will be identified to minimize impacts. Implementation agencies will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with all mitigation measures.

    - Individual projects will be consistent with local land use plans and policies that designate areas for urban land use and preserve agricultural lands that support the economic viability of agricultural activities.

    - Prior to final approval of each individual improvement project, the implementing agency will conduct the appropriate project-specific environmental review, including consideration of potential land use impacts.

1. Impacts to sensitive receptors will be evaluated as part of the appropriate project-specific environmental review, and mitigation measures will be identified to minimize impacts. Implementation agencies will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with all mitigation measures.

    - Prior to commencing construction activities on individual projects, project implementation agencies will comply with applicable federal, state and applicable city and county land use plans, policies, and regulations.

    - Prior to commencing construction activities with individual projects, implementation agencies will obtain necessary local permits and meet conditions for approval from applicable cities and counties.

    - Prior to final approval of each individual improvement project, the implementing agency will conduct the appropriate project-specific environmental review, including consideration of potential land use impacts.

    - Potential significant impacts to land uses will be mitigated.

2. The impact on open space and community recreation areas will be evaluated as part of the appropriate individual improvement project-specific environmental review and mitigation measures will be identified to minimize impacts. Implementation agencies will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with all mitigation measures.

    - Implementation agencies will ensure that projects are consistent with federal, state, and local plans that preserve open space and recreation.

    - Implementation agencies will identify open space and recreation areas that could be preserved and will include mitigation measures (such as dedication or payment of in-lieu fees) for the loss of open space.

    - Prior to final approval of each individual improvement project, the implementing agency will conduct the appropriate project-specific environmental review, including consideration of loss of open space and recreation.

- Potential significant impacts to open space will be mitigated.

- For projects that require approval or funding by the U.S. Department of Transportation, implementation agencies will comply with Section 4(f) of the U.S. Department of Transportation Act.

3. The impact on significant agricultural resources will be evaluated as part of the appropriate individual improvement project-specific environmental review, and mitigation measures will be identified to minimize impacts. Implementation agencies will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with all mitigation measures.

   - Individual projects will be consistent with federal, state, and local policies that preserve agricultural lands and support the economic viability of agricultural activities, as well as policies that provide compensation for property owners if preservation is not feasible.

   - For projects in agricultural areas, individual improvement project implementation agencies will contact the California Department of Conservation and the County Agricultural Commissioner's office to identify the location of prime farmlands and lands that support crops considered valuable to the local or regional economy.

   - Prior to final approval of each individual improvement project, the implementing agency will establish conservation easement programs to mitigate impacts to prime farmland.

   - Prior to final approval of each individual improvement project, the implementing agency will avoid impacts to prime farmlands or farmlands that support crops considered valuable to the local or regional economy.

   - Prior to final approval of each individual improvement project, the implementing agency will encourage enrollments of agricultural lands in the Williamson Act.

4. The mitigation measures listed above for Impacts 3.10.1 through 3.10.5 would be applied as mitigation for this impact. In addition, the following measure would apply.

   - Regional planning efforts will be used to build a consensus in the region to support changes in land use to accommodate future population growth while maintaining the quality of life in the region.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies. (Caltrans and local agencies).

When Mitigation Measures are to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

Noise

3.11 Mitigation

1. As part of project-specific environmental review, a detailed evaluation of noise impacts will be undertaken. Project-specific mitigation measures will be identified, as necessary. All mitigation measures will be included in project-level analysis, as appropriate. The implementing agency or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with mitigation measures.

    - Implementing agencies will comply with all local sound control and noise level rules, procedures, regulations, and ordinances.

    - Implementing agencies will limit the hours of construction to between 6:00 a.m. and 8:00 p.m. on Monday through Friday and between 7:00 a.m. and 8:00 p.m. on weekends.

    - Equipment and trucks used for individual improvement project construction will utilize the best available noise control techniques (including mufflers, use of intake silencers, ducts, engine enclosures and acoustically attenuating shields or shrouds) in order to minimize construction noise impacts.

    - Impact equipment (e.g., jackhammers, pavement breakers, and rock drills) used for individual improvement project construction will be hydraulically or electrical powered wherever feasible to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatically powered tools is unavoidable, an exhaust muffler on the compressed air exhaust will be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves will be used where feasible, and this could achieve a reduction of 5 dBA. Quieter procedures will be used such as drilling rather than impact equipment whenever feasible.

    - Implementing agencies will ensure that stationary noise sources will be located as far from sensitive receptors as possible. If they must be located near existing receptors, they will be adequately muffled.

    - Implementing agencies will designate a complaint coordinator responsible for responding to noise complaints received during the construction phase. The name and phone number of the complaint coordinator will be conspicuously posted at construction areas and on all advanced notifications. This person will be responsible for taking steps required to resolve complaints, including periodic noise monitoring, if necessary.

    - Noise generated from any rock-crushing or screening operations performed within 3,000 feet of any occupied residence will be mitigated by the individual improvement project proponent by strategic placement of material stockpiles between the operation and the affected dwelling or by other means approved by the local jurisdiction.

    - Implementing agencies will direct contractors to implement appropriate additional noise mitigation measures including, but not limited to, changing the location of stationary construction equipment, shutting off idling equipment, rescheduling construction activity, notifying adjacent residents in advance of construction work, and installing acoustic barriers around stationary construction noise sources to comply with local noise control requirements.

- Implementing agencies will implement use of portable barriers during construction of subsurface barriers, debris basins, and storm water drainage facilities.

- No pile-driving or blasting operations will be performed within 3,000 feet of an occupied residence on Sundays, legal holidays, or between the hours of 8:00 p.m. and 8:00 a.m. on other days. Any variance from this condition will be obtained from the individual improvement project proponent and must be approved by the local jurisdiction.

- Wherever possible, sonic or vibratory pile drivers will be used instead of impact pile drivers, (sonic pile drivers are only effective in some soils). If sonic or vibratory pile drivers are not feasible, acoustical enclosures will be provided as necessary to ensure that pile-driving noise does not exceed speech interference criterion at the closest sensitive receptor.

- In residential areas, pile driving will be limited to daytime working hours.

- Engine and pneumatic exhaust controls on pile drivers will be required as necessary to ensure that exhaust noise from pile driver engines are minimized to the extent feasible.

- Where feasible, pile holes will be pre-drilled to reduce potential noise and vibration impacts.

2. Noise-sensitive land use mitigation

- As part of the appropriate environmental review of each project, a project specific noise evaluation shall be conducted and appropriate mitigation identified and implemented.

- Project implementation agencies shall employ, where their jurisdictional authority permits, land use planning measures, such as zoning, restrictions on development, site design, and use of buffers to ensure that future development is compatible with adjacent transportation facilities.

- Project implementation agencies shall, to the extent feasible and practicable, maximize the distance between noise-sensitive land uses and new roadway lanes, roadways, rail lines, transit centers, park-and-ride lots, and other new noise generating facilities.

- Project implementation agencies shall construct sound reducing barriers between noise sources and noise-sensitive land uses. Sound barriers can be in the form of earth-berms or soundwalls. Constructing roadways so as appropriate and feasible that they are depressed below-grade of t:he existing sensitive land uses also creates an effective barrier between the roadway and sensitive receptors.

- Project implementation agencies shall, to the extent feasible and practicable, improve the acoustical insulation of dwelling units where setbacks and sound barriers do not sufficiently reduce noise.

- The project implementation agencies shall implement, to the extent feasible and practicable, speed limits and limits on hours of operation of rail and transit systems, where such limits may reduce noise impacts.

- Passenger stations, central maintenance facilities, decentralized maintenance facilities, and electric substations should be located away from sensitive receptors.

3. Mitigation measures intended to reduce the noise impacts on sensitive receptors are part of the 2011 RTP. These include: site design, buffers, soundwalls, etc.

   Further reduction in noise impacts would be obtained through the implementation of the measures described in 3.11.1 and 3.11.2.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies. (Caltrans and local agencies).

When Mitigation Measures are to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

Population/Housing

3.12 Mitigation

1. As part of the appropriate project-specific environmental review, population and job displacement impacts will be evaluated. Mitigation measures will be identified to minimize impacts. Implementation agencies will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with all mitigation measures.

   - For projects with the potential to displace homes or businesses, project implementation agencies will evaluate alternate route alignments and transportation facilities that minimize the displacement of homes and businesses. An iterative design and impact analysis would help where impacts to persons or businesses are involved. Potential impacts will be minimized to the extent feasible. If possible, existing rights-of-way should be used.

   - Implementation agencies will identify businesses and residences to be displaced. As required by law, relocation and assistance will be provided to displaced residents and businesses, in accordance with the federal Uniform Relocation and Real Property Acquisition Policies Act of 1970 and the State of California Relocation Assistance Act, as well as any applicable City and County policies.

   - Implementation agencies will develop a construction schedule that minimizes potential neighborhood deterioration from protracted waiting periods between right-of-way acquisition and construction.

2. As part of the appropriate project-specific environmental review, community disruption or division will be evaluated. Mitigation measures will be identified to minimize impacts. Implementation agencies will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with all mitigation measures.

- Implementation agencies will design new transportation facilities that protect access to existing community facilities. During the design phase of the individual improvement project, community amenities and facilities should be identified and access to them considered in the design of the individual improvement project.

- Implementation agencies will design roadway improvements, in a manner that minimizes barriers to pedestrians and bicyclists. During the design phase, pedestrian and bicycle routes will be determined that permit easy connections to community facilities nearby in order not to divide the communities.

4. The mitigation measures listed above for Impacts 3.12.1 and 3.12.2 in the Draft SEIR would be applied as mitigation for this impact. In addition, the following measure would apply:

    - Regional planning efforts will be used to build a consensus in the region to support changes in population, housing and employment to accommodate future growth while maintaining the quality of life in the region.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies. (Caltrans and local agencies).

When Mitigation Measures are to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

Public Utilities, Other Utilities & Services Systems

3.13 Mitigation

1. As part of individual improvement project-specific environmental review, implementation agencies will evaluate the impacts on police, fire, and medical services in the County. Appropriate mitigation measures should be identified for all impacts. The implementation of projects by agencies or local jurisdiction will be responsible for ensuring adherence to the mitigation measures. Kern COG will be provided with documentation indicating compliance with mitigation measures.

    - Prior to construction, the implementation agency will ensure that all necessary local and state road and railroad encroachment permits are obtained. The implementation agency also will comply with all applicable conditions of approval. As deemed necessary by the governing jurisdiction, the road encroachment permits may require the contractor to prepare a traffic control plan in accordance with professional engineering standards prior to construction. Traffic control plans should include the following requirements:

        - Identify all roadway locations where special construction techniques (e.g., directional drilling or night construction) would be used to minimize impacts to traffic flow;
        - Develop circulation and detour plans to minimize impacts to local street circulation. This may include the use of signing and flagging to guide vehicles through and/or around the construction zone;
        - Schedule truck trips outside of peak morning and evening commute hours;

- Limit lane closures during peak hours to the extent possible;
- Use haul routes, minimizing truck traffic on local roadways, to the extent possible;
- Include detours for bicycles and pedestrians in all areas potentially affected by individual improvement project construction;
- Install traffic control devices as specified in the California Department of Transportation Manual of Traffic Controls for Construction and Maintenance Work Zones;
- Develop and implement access plans for highly sensitive land uses such as police and fire stations, transit stations, hospitals, and schools. Access plans will be developed with the facility owner or administrator. To minimize disruption of emergency vehicle access, affected jurisdictions will be asked to identify detours for emergency vehicles, which will then be posted by the contractor. The facility owner or operator will be notified in advance of the timing, location, and duration of construction activities and the locations of detours and lane closures;
- Store construction materials only in designated areas; and
- Coordinate with local transit agencies for temporary relocation of routes or bus stops in work zones, as necessary.

- Projects requiring police protection, fire service, and emergency medical service will coordinate with the local fire department and police department to ensure that the existing public services and utilities will be able to handle the increase in demand for their services. If the current levels of service at the individual improvement project site are found to be inadequate, infrastructure improvements and personnel requirements for the appropriate public service will be identified in each individual improvement project's CEQA documentation.

- The growth inducing potential of individual projects will be carefully evaluated so that the full implications of the individual improvement project are understood. Individual environmental documents will quantify indirect impacts (growth that could be facilitated or induced) on public services and utilities. Lead and responsible agencies should then make any necessary adjustments to the applicable General Plan.

2. As part of individual improvement project-specific environmental review, implementation agencies will evaluate the impacts on demand for solid waste, wastewater, and potable water services in the County. Appropriate mitigation measures should be identified for all impacts. The implementation agencies or local jurisdiction will be responsible for ensuring adherence to the mitigation measures. Kern COG will be provided with documentation indicating compliance to mitigation measures.

- Projects requiring wastewater service, solid waste collection, or potable water service will coordinate with the local public works department to ensure that the existing public services and utilities would be able to handle the increase. If the current infrastructure servicing the individual improvement project site is found to be inadequate, infrastructure improvements for the appropriate public service utility will be identified in each individual improvement project's CEQA documentation.

- Reclaimed water will be used for landscaping purposes instead of potable water wherever feasible.

- Each of the proposed projects will comply with applicable regulations related to solid waste disposal.

- The construction contractor will work with the County Recycling Coordinator to ensure that source reduction techniques and recycling measures are incorporated into individual improvement project construction.

- The amount of solid waste generated during construction will be estimated prior to construction, and appropriate disposal sites will be identified and utilized.

3. As part of individual improvement project environmental review, individual agencies will evaluate the impacts resulting from soil accumulation during construction of the projects. Appropriate mitigation measures will be identified for all impacts. The implementation agencies or local jurisdiction will be responsible for ensuring adherence to the mitigation measures. Kern COG will be provided with documentation indicating compliance with mitigation measures.

   Implement appropriate measures, such as the washing of construction vehicles undercarriages before leaving the construction site or increasing the use of street cleaning machines, to reduce the amount of soil on local roadways as a result of construction.

4. Underground utility mitigation:

   - As part of individual improvement project environmental review, implementation agencies will evaluate the impacts resulting from the potential for severing underground utility lines during construction of the projects. Appropriate mitigation measures will be identified for all impacts. The implementation agencies or local jurisdiction will be responsible for ensuring adherence to mitigation measures. Kern COG will be provided with documentation indicating compliance with mitigation measures.

   - Prior to construction, the implementing agency or contractor will identify the locations of existing utility lines. All known utility lines will be avoided during construction.

5. Cumulative mitigation:

   - The growth inducing potential of individual projects shall be carefully evaluated so that the full implications of the projects are understood. Individual environmental documents shall quantify indirect impacts (growth that could be facilitated or induced) on public services and utilities to the extent feasible.

   - The California Integrated Waste Management Board shall continue to enforce solid waste diversion mandates that are enacted by the Legislature.

   - Local jurisdictions shall continue to adopt programs to comply with state solid waste diversion rate mandates and, where possible, shall encourage further recycling to exceed these rates.

   - Local jurisdictions shall implement or expand city or county-wide recycling and composting programs for residents and businesses. This could include extending the types of recycling services offered (e.g., to include food and green waste recycling) and providing public education and publicity about recycling services.

   - Project implementation agencies shall coordinate regional approaches and strategic siting of waste management facilities.

   - Project implementation agencies shall prioritize siting of new solid waste management facilities including recycling, composting, and conversion technology facilities in conjunction with existing waste management or material recovery facilities.

   - Project implementation agencies shall increase programs to educate the public and increase awareness of reuse, recycling, composting, and green building benefits and raise consumer education issues at the county and city level, as well as at local school districts and education facilities.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies. (Caltrans and local agencies).

When Mitigation Measures are to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

Transportation/Traffic

3.14 Mitigation

1. Measures intended to reduce vehicle miles traveled and reduce congestion are part of the 2011 RTP. These include: increasing rideshare and work-at-home opportunities to reduce demand on the transportation system, investments in non-motorized transportation and maximizing the benefits of the land use/transportation connection, other Travel Demand Management measures described in the 2011 RTP and in local agency General Plans, and key transportation investments targeted to reduce congestion levels and improve LOS.

2. As part of individual improvement project environmental review, individual agencies will consider impacts and plan for grade separations along major thoroughfares, identify to the extent feasible, improvements to existing at-grade highway-rail crossings caused by increases in traffic volumes, and provide, to the extent possible, appropriate fencing to limit the access of trespassers onto the railroad right-of-way. The implementation agencies or local jurisdiction will be responsible for ensuring adherence to the mitigation measure. Kern COG will be provided with documentation indicating compliance with the mitigation measure.

Energy & Energy Conservation

3.15 Mitigation

1. Project implementation agencies shall review energy impacts as part of any CEQA-required project-level environmental analysis and specify appropriate mitigation measures for any identified energy impacts.

2. During the design and approval of transportation improvements implemented under the proposed 2011 RTP, the following energy efficiency measures shall be incorporated when applicable:

    - The design or purchase of any lighting fixtures including but not limited to lighting at transit stations, arterials or freeways, and parking structures/lots shall achieve energy reductions beyond an estimated baseline energy use for such lighting.
    - LED technology shall be used for all new or replaced traffic lights, rail signals, and other features compatible with LED technology.

3. Local agencies should consider various best practices and technological improvements that can reduce the consumption of fossil fuels such as:

   - Expanding light-duty vehicle retirement programs
   - Increasing commercial vehicle fleet modernization
   - Implementing driver training modules on fuel consumption
   - Replacing gasoline powered mowers with electric mowers
   - Reducing idling from construction equipment
   - Incentivizing alternative fuel vehicles and equipment
   - Developing infrastructure for alternative fueled vehicles
   - Implementing truck idling rules, devices, and truck-stop electrification
   - Requiring electric truck refrigerator units
   - Reducing locomotives fuel use
   - Modernizing older off-road engines and equipment
   - Encouraging freight mode shift
   - Limit use and develop fleet rules for construction equipment
   - Requiring zero-emission forklifts

4. Local agencies should include energy analyses in environmental documentation and general plans with the goal of conserving energy through the wise and efficient use of energy. For any identified energy impacts, appropriate mitigation measures should be developed and monitored. Kern COG recommends the use of Appendix F, Energy Conservation, of the *CEQA Guidelines.*

5. Local agencies should streamline permitting and provide public information to facilitate accelerated construction of solar and wind power.

6. Local agencies should adopt a "Green Building Program" to promote green building standards. Green buildings can reduce local environmental impacts, regional air pollutant emissions and global greenhouse gas emissions. Green building standards involve everything from energy efficiency, usage of renewable resources and reduced waste generation and water usage. For example, water-related energy use consumes 19 percent of the state's electricity. The residential sector accounts for 48 percent of both the electricity and natural gas consumption associated with urban water use. While interest in green buildings has been growing for some time, cost has been a main consideration as it may cost more up front to provide energy-efficient building components and systems. Initial costs can be a hurdle even when the installed systems will save money over the life of the building. Energy efficiency measures can reduce initial costs, for example, by reducing the need for over-sized air conditioners to keep buildings comfortable. Undertaking a more comprehensive design approach to building sustainability can also save initial costs through reuse of building materials and other means.

   A comprehensive study of the value of green building savings is the 2003 report to California's Sustainable Building Task Force. In the words of the report: "While the environmental and human health benefits of green building have been widely recognized, this comprehensive report confirms that minimal increases in upfront costs of about 2% to support green design would, on average, result in life cycle savings of 20% of total construction costs -- more than ten times the initial investment. For example, an initial upfront investment of up to $100,000 to incorporate green building features into a $5 million project would result in a savings of $1 million in today's dollars over the life of the building."

7. Local governments should alter zoning to improve jobs/housing balance, create communities where people live closer to work, and bike, walk, and take transit as a substitute for personal auto travel. Creating walkable, transit oriented nodes would generally reduce energy use and greenhouse gas emissions. Residential energy use (electricity and natural gas) accounts for 14 percent of California's greenhouse gas emissions. It is estimated that households in transit-oriented developments drive 45 percent less than residents in auto-dependent neighborhoods. In addition, mixed land uses (i.e., residential developments near work places, restaurants, and shopping centers) with access to public transportation have been shown to save consumers up to 512 gallons of gasoline per year. Furthermore, studies have shown that the type of housing (such as multi-family) and the size of a house have strong relationships to residential energy use. Residents of single-family detached housing consume over 20 percent more primary energy than those of multifamily housing and 9 percent more than those of single-family attached housing.

8. Kern COG shall work with its member agencies to increase the number of AFVs (i.e., vehicles not powered strictly by gasoline or diesel fuel) both in municipally owned vehicles, as well as those owned by franchisees of these cities, such as trash haulers, green waste haulers, street sweepers, and curbside recyclable haulers.

9. Bid solicitations for construction of projects proposed in the 2011 RTP and subsequent RTP updates shall preference the use of alternative formulations of cement and asphalt with reduced GHG emissions to the extent that such cement and asphalt formulations are available at a reasonable cost in the marketplace. Solicitations shall also preference the recycling of construction waste and debris if market conditions permit.

10. Kern COG shall continue to develop, in coordination with the California Air Resources Board, a data and information collection and analysis system that provides an understanding of the energy demand and greenhouse gas emissions in the Kern region.

11. All mitigation measures listed in Chapter 3, Section 3.5.1, are incorporated by reference and shall be implemented by implementing agencies to address energy conservation impacts.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies. (Caltrans and local agencies).

When Mitigation Measures are to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

Final
Subsequent Environmental Impact Report Addendum

May 2011

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March 1, 2011

INTRODUCTION

The Kern Council of Governments (Kern COG) has prepared an amendment to the 2011 Regional Transportation Plan (2011 RTP Amendment No.1). The 2011 RTP, adopted on July 15, 2010 by Kern COG, included a list financially constrained improvement projects. Amendment No.1 is required to reflect changing priorities for proposed projects within the Thomas Road Improvement Program (TRIP). Amendment to the 2011 RTP allows the projects to be programmed into the Regional/Federal Transportation Improvement Program (RTIP/FTIP), making them eligible for funding. The total net change in funding for these revisions is $0 over the 24-year period or between years 2011 and 2035. The total number and location of projects does not change from those approved as part of the 2011 RTP.

This document, prepared pursuant to the California Environmental Quality Act (CEQA), Public Resources Code 21000 *et seq*., constitutes an Addendum to the 2011 Regional Transportation Plan Subsequent Environmental Impact Report (2011 RTP SEIR) prepared and certified on July 15, 2010 for the 2011 RTP, and proposes that the certified 2011 SEIR together with this Addendum serve as the EIR for the proposed 2011 RTP Amendment No.1 (project). This SEIR Addendum outlines the changes to the project, as analyzed in the 2011 RTP SEIR, and evaluates whether those changes, or new information or changed circumstances, would require substantial changes to the impacts identified or mitigation measures proposed in the 2011 RTP SEIR. The proposed project to amend the 2011 RTP does not create any new significant adverse environmental impacts outside of the scope of the analyses already contained in the previously certified 2011 RTP SEIR. Since the current proposed project would not generate any new significant adverse environmental impacts or make any existing significant impacts substantially worse, this Addendum to the 2011 RTP SEIR has been prepared. The 2011 RTP and 2011 RTP SEIR can be found at www.kerncog.org and are also on file at Kern COG offices.

CEQA PROVISIONS

As a part of Kern COG's current review of the RTP Amendment No.1, it is necessary to identify any areas of the 2011 RTP SEIR that might be substantially impacted by changes in projects or policy direction. Section 15162 of the California Environmental Quality Act (CEQA) provides that "[the lead agency…shall prepare an addendum to a previously certified EIR if some changes or additions are necessary but none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have occurred." (CEQA Guidelines §15164(a)].

The referenced provision states that "no subsequent EIR shall be prepared for that project unless the lead agency determines, on the basis of substantial evidence in the light of the whole record, one or more of the following:

- Substantial changes are proposed in the project, which will require major revisions of the previous EIR or Negative Declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;
- Substantial changes occur with respect to the circumstances under which the project is undertaken, which will require major revisions of the previous EIR or Negative Declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; and/or
- New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete or the Negative Declaration was adopted, shows any of the following:
  - The project will have one or more significant effects not discussed in the previous EIR or Negative Declaration;
  - Significant effects previously examined will be substantially more severe than shown in the previous EIR;
  - Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; and/or
  - Mitigation measures or alternatives, which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

Based upon review of the project and review of the potential environmental effects, it has been determined that the proposed project does not create any new significant adverse environmental impacts outside of the scope of the analyses already contained in the previously certified 2011 RTP SEIR. Since the proposed project would not generate any new significant adverse environmental impacts or make any existing significant impacts substantially worse, an Addendum to the 2011 RTP SEIR has been prepared. The 2011 RTP, 2011 RTP SEIR, 2011 RTP Amendment No.1, and the 2011 RTP Draft SEIR Addendum prepared to address RTP Amendment No.1 can be found at www.kerncog.org and are on file at Kern COG offices.

PROJECT DESCRIPTION

2011 Regional Transportation Plan, Program Subsequent EIR, and 2011 RTP Amendment No.1 SEIR Addendum

The 2011 RTP is a planning guide containing transportation policy and projects for a 24 year period (through Fiscal Year 2034/35). The RTP is also used to guide development of the Regional Transportation Improvement Program (RTIP). The RTIP is the programming document used to plan the construction of regional transportation projects and requires State Department of Transportation (Caltrans) approval. Project-level assessment of environmental impacts was not addressed by the 2011 RTP SEIR nor have they been addressed in this RTP Amendment No.1 SEIR Addendum. The RTP is also used as a transportation planning document by

each of the twelve member jurisdictions of Kern COG. The members include the County of Kern and the cities of Arvin, Bakersfield, California City, Delano, Maricopa, McFarland, Ridgecrest, Shafter, Taft, Tehachapi, and Wasco.

The RTP identifies the region's mobility needs and issues through to the year 2035, sets forth an action plan of projects and programs to address needs consistent with the adopted policies, and documents the financial resources needed to implement the plan. Additional areas of emphasis and policy initiatives in the 2011 RTP include Climate Change (including a Climate Change Plan and other greenhouse gas policies), Environmental Justice, Goods Movement, and Blueprint Planning. In addition, the 2011 RTP includes updated improvement project lists and updated performance measures. The 2011 RTP promotes a "balanced" transportation system. It calls for increased investments in alternative transportation modes, while accommodating a necessary amount of new highway capacity. Heavier emphasis on alternative modes, above and beyond those already incorporated in the RTP, may be desired or preferred but because of financial constraints, alternative mode additions are not financially feasible in the timeframe of the RTP.

The process to approve the 2011 RTP included: (1) assessing Kern County's transportation needs, identifying projects to address the needs, evaluating the projects considering benefit vs. cost and other performance objectives, and addressing air quality conformity requirements; (2) conducting public hearings on the RTP by Kern COG, and certification of the 2011 RTP SEIR by Kern COG, and (3) approval of a resolution passed by Kern COG approving the 2011 RTP. Public involvement was encouraged and received throughout the 2011 RTP development process. The 2011 RTP consists of required elements and is organized into the following chapters:

- Chapter 1. Introduction;
- Chapter 2. Transportation Planning Policies;
- Chapter 3. Planning Assumptions;
- Chapter 4. Strategic Investments;
- Chapter 5. Financing Transportation;
- Chapter 6. Future Links;
- Chapter 7. Monitoring Progress;
- Chapter 8. References; and
- Appendices. (Includes the San Joaquin Valley Regional Transportation Overview and other required documents)

The RTP, in conjunction with General Plan Circulation Elements adopted by the County of Kern and each of the cities within the County, designates the location and scale of existing and proposed transportation systems. The financing program contained in the 2011 RTP considered a projection of funding sources that may be available to finance transportation improvement projects over time. The projection of funds in the 2011 RTP was accomplished considering historical allocations of federal, state and other funding.

To evaluate the regional impacts associated with the 2011 RTP, a Program Subsequent EIR (SEIR) was prepared and certified. CEQA guidelines (Section 15168) define a Program EIR as, "an EIR that may be prepared on a series of actions that can be characterized as one large project and are related either geographically, or are logical parts in the chain of contemplated actions, or are in connection with issuance's of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program, or 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."

After reviewing CEQA Section 15164 (referenced above), it was determined that the obligation to prepare another Subsequent or Supplemental EIR for Amendment No.1 was not met and that an Addendum was the appropriate environmental document to address the 2011 RTP Amendment No 1.

Amendment No.1 to the 2011 RTP

The scope of the proposed 2011 RTP Amendment No.1 is required to reflect changing priorities for proposed projects within the Thomas Road Improvement Program (TRIP). Amendment to the 2011 RTP allows the projects to be programmed into the Regional/Federal Transportation Improvement Program (RTIP/FTIP), making them eligible for funding. The total net change in funding for these revisions is $0 over the 24-year period or between years 2011 and 2035. Proposed 2011 RTP Amendment No.1 necessitates preparation of a transportation/air quality conformity analysis and an Addendum to the programmatic SEIR for the 2011 RTP to address interim year analysis of air quality and climate change impacts.

Improvement project delivery schedules reflected in the 2011 RTP are proposed to be revised as part of RTP Amendment No.1 as referenced in Table 1. Table 1 replaces Table 4.1 in the 2011 RTP. Bolded information in Table 1 reflects those projects that changed with RTP Amendment No.1 in terms of project scheduling or timing only. Figures 1 through 4 provide a graphic view of the planned street and highway improvement projects reflected in Table 1 and replace Figures 4-6 through 4-9 in the 2011 RTP.

FINDINGS OF THE EIR

CEQA requires that a Final EIR be prepared, certified, and considered by decision-makers prior to taking action on a project. The Final EIR provides the local agency an opportunity to respond to comments received on the Draft EIR and to incorporate any changes or additions necessary to clarify and/or supplement the information contained in the document. The Final SEIR prepared for the 2011 RTP, therefore, represents the culmination of all environmentally related issues raised during the comment period on the Draft SEIR. In addition, the Final SEIR contains a Mitigation Monitoring and Reporting Program that identifies the necessary processes that are required to ensure that the mitigation measures recommended in the Draft SEIR are implemented. The Final SEIR for the 2011 RTP is composed of the following documents:

- 2007 Destination 2030 Regional Transportation Plan (RTP), Draft Environmental Impact Report (EIR), March 1, 2007;
- 2007 Destination 2030 RTP, Final EIR, Mitigation Monitoring and Reporting Program, and Statement of Overriding Considerations, May 17, 2007;
- 2007 Destination 2030 RTP Amendment No.1, Addendum EIR, January 15, 2009
- 2007 Destination 2030 RTP Amendment No.1, January 15, 2009
- 2007 Destination 2030 RTP Amendment No. 2, Addendum EIR, September 17, 2009
- 2007 Destination 2030 RTP Amendment No. 2, September 17, 2009
- 2011 RTP Draft SEIR, April 30, 2010;
- 2011 RTP Final SEIR, July 15, 2010; and
- 2011 RTP, July 15, 2010.

The summary of mitigation measures and the mitigation monitoring program identified beginning on Page 107 remain applicable considering changes reflected in this AEIR.

TABLE 1

Constrained Program of Projects

2011 through 2015 - Major Highway Improvements					
Project	**Location**		**YOE Cost**	**Project ID**	**Start**
Route 14	Inyokern	Redrock / Inyokern Rd to Rt 178 - widen to four lanes (Phase1)	42,000,000	KER08RTP006	2014
Route 46	Lost Hills	SLO County Line to Brown Material Rd - widen to four lanes (Phases 1 -3)	232,070,000	KER08RTP003	2009
Route 58	**Metro Bkfd**	**Rosedale Hwy - Calloway Dr to Rt 99 - widen existing highway**	**24,226,000**	**KER08RTP007**	**2013**
Route 58	**Metro Bkfd**	**Rosedale Hwy - Allen Rd to Calloway Dr - widen existing highway**	**8,800,000**	**KER08RTP090**	**2013**
Route 58	Bakersfield	Rt 99 to Cottonwood Rd. - widen to six lanes	50,000,000	KER08RTP019	2015
Route 99	**Metro Bkfd**	**Hosking Ave - construct interchange**	**35,000,000**	**KER08RTP009**	**2014**
Route 99	Bakersfield	Wilson Rd to Rt 119 - widen to eight lanes	52,000,000	KER08RTP077	2012
Route 99	Bakersfield	Olive Drive - construct interchange upgrades	6,100,000	KER08RTP091	2012
Route 99	Bakersfield	Rt 204 to 7th Standard Rd - widen to eight lanes (Phase 1)	12,000,000	KER08RTP104	2012
Route 99	Delano	Woollomes Ave - construct interchange upgrades	5,000,000	KER08RTP114	2010
Route 178	**Bakersfield**	**Morning Dr to Vineland Rd - new interchange with freeway**	**58,800,000**	**KER08RTP010**	**2013**
Route 178	**Bakersfield**	**Vineland Rd to east of Miramonte Dr - widen existing highway**	**50,000,000**	**KER08RTP011**	**2014**
Challenger Dr. Ext.	Tehachapi	Viena St to Dennison Rd - construct new street	1,500,000	KER08RTP015	2011
W Ridgecrest Blvd	Ridgecrest	Mahan St to China Lake Blvd - widen to four lanes	10,200,000	KER08RTP001	2011
Westside Parkway	Metro Bkfd	Rt 99 / Oak St to Heath Rd - construct local freeway	340,000,000	KER08RTP004	2009
Hageman Flyover	**Bakersfield**	**Knudsen Dr to Rt 204 - construct extension**	**68,900,000**	**KER08RTP013**	**2013**
Hageman Grade Sep	Metro Bkfd	Hageman/Santa Fe Way @ BNSF - construct grade separation	39,500,000	KER08RTP117	2011
Oak St/24th Street	Bakersfield	Rt 178 (24th St) and Oak St - construct improvements	19,100,000	KER08RTP012	2012
Centennial Corridor	**Bakersfield**	**I-5 to Rt-58/99 - element of the Bakersfield Beltway System - construct new freeway and/or operational improvements**	**645,000,000**	**KER08RTP020**	**2015**
24th Street	**Bakersfield**	**Rt 178 (24th and 23rd St) Oak St to M Street - widen existing highway**	**34,000,000**	**KER08RTP014**	**2013**
		Sub-total	**$1,734,196,000**		
2016 through 2020 - Major Highway Improvements					
Project	**Location**	**Scope**	**YOE Cost**	**Project ID**	**Start**
Route 14	Inyokern	Redrock / Inyokern Rd to Rt 178 - widen to four lanes (Phase 2)	42,000,000	KER08RTP017	2018
		Sub-total	**$42,000,000**		
2021 through 2025 - Major Highway Improvements					
Project	**Location**	**Scope**	**YOE Cost**	**Project ID**	**Start**
Route 14	Inyokern	Redrock / Inyokern Rd to Rt 178 - widen to four lanes (Phase 3)	$32,000,000	KER08RTP024	2022
Route 58	**Bakersfield**	**Rosedale Hwy - Rt 43 to Allen Rd - widen existing highway**	**59,000,000**	**KER08RTP092**	**2025**
Route 58	**Metro Bkfd**	**Rosedale Hwy @ Minkler Spur / Landco - construct grade separation**	**27,000,000**	**KER08RTP118**	**2025**
Route 58	Bakersfield	Rt 99 to Cottonwood Rd - widen to eight lanes	47,400,000	KER08RTP093	2025
Route 65	Bakersfield	James Rd to Merle Haggard Dr - widen to four lanes	3,000,000	KER08RTP094	2021
Route 119	Taft	Cherry Ave to Elk Hills Rd (Phase 1, bypass) - widen to four lanes	115,000,000	KER08RTP022	2022
Route 178	Bakersfield	At Rt 204 - construct interchange	25,700,000	KER08RTP095	2025
Route 184	Bakersfield	At Union Pacific Railroad - construct grade separation	26,400,000	KER08RTP108	2025
US 395	Ridgecrest	Between Rt 178 and China Lake Blvd - construct passing lanes	20,000,000	KER08RTP089	2022
7th Standard Rd	**Shafter/Bkfd**	**Rt 43 to Santa Fe Way - widen existing roadway**	**14,000,000**	**KER08RTP113**	**2025**
West Beltway	**Metro Bkfd**	**Rosedale Hwy to Westside Parkway - construct new facility**	**93,500,000**	**KER08RTP016**	**2025**
		Sub-total	**$463,000,000**		
2026 through 2030 - Major Highway Improvements					
Project	**Location**	**Scope**	**YOE Cost**	**Project ID**	**Start**
Route 46	Lost Hills	Brown Material Rd to I-5 - interchange upgrade at I-5 (Phase 4)	$97,000,000	KER08RTP018	2026
Route 119	Bakersfield	I-5 to Buena Vista - widen to four lanes	31,300,000	KER08RTP099	2026
Route 178	**Metro Bkfd**	**West of Fairfax Rd to Vineland Rd - widen existing freeway**	**17,000,000**	**KER08RTP111**	**2028**
Route 178	Bakersfield	Existing west terminus to Oswell St - widen to eight lanes	140,500,000	KER08RTP026	2026
Route 184	Bakersfield	Panama Rd to Rt 58 - widen to four lanes	10,500,000	KER08RTP100	2029
Route 184	Bakersfield	Morning Dr to Rt 178 - widen to four lanes	5,000,000	KER08RTP101	2026
Route 204	**Bakersfield**	**Airport Drive to Rt 178 - widen existing highway**	**55,000,000**	**KER08RTP083**	**2030**
Route 204	**Bakersfield**	**F St - construct interchange**	**36,000,000**	**KER08RTP081**	**2030**
		Sub-total	**$392,300,000**		

TABLE 1 (Continued)

Constrained Program of Projects

2031 through 2035 - Major Highway Improvements					
Project	**Location**	**Scope**	**YOE Cost**	**Project ID**	**Start**
Route 58	Bakersfield	At various locations - ramp improvements	$32,600,000	KER08RTP103	2033
Route 99	Bakersfield	At Olive Drive - reconstruct interchange	108,000,000	KER08RTP021	2033
Route 99	Bakersfield	At Snow Rd - construct new interchange	138,200,000	KER08RTP115	2033
Route 99	Bakersfield	Rt 204 to 7th Standard Rd - widen to eight lanes (Phase 2)	90,800,000	KER08RTP138	2033
Route 99	Bakersfield	At various locations - ramp improvements	37,000,000	KER08RTP105	2033
Route 119	Taft	Elk Hills - County Rd to Tupman Ave - widen to four lanes (Phase 2)	48,000,000	KER08RTP086	2033
Route 178	**Metro Bkfd**	**Vineland to Miramonte - new interchange; widen existing freeway**	**119,000,000**	**KER08RTP025**	**2033**
Route 178	**Bakersfield**	**Miramonte to Rancheria - widen existing highway**	**19,800,000**	**KER08RTP084**	**2033**
Route 178	Bakersfield	At Rt 204 and 178 - reconstruct freeway ramps	50,000,000	KER08RTP085	2033
Route 178	Bakersfield	At various locations - ramp improvements	37,000,000	KER08RTP106	2033
Route 184	Lamont	Rt 58 to Rt 178 - widen to four lanes	90,000,000	KER08RTP045	2033
West Beltway	**Metro Bkfd**	**Pacheco Rd to Westside Parkway - construct new facility**	**115,793,000**	**KER08RTP139**	**2033**
West Beltway	**Metro Bkfd**	**Rosedale Hwy to 7th Standard Rd - construct new facility**	**115,793,000**	**KER08RTP102**	**2033**
West Beltway	**Metro Bkfd**	**Taft Hwy to Pacheco Rd - construct new facillity**	**90,000,000**	**KER08RTP097**	**2033**
		Sub-total	**$1,091,986,000**		
		Total Major Highway Improvements	**$3,723,482,000**		
2011 through 2035 - Local Streets and Roads					
Project	**Location**	**Scope**	**YOE Cost**	**Project ID**	**Start**
Various Locations	Metro Bkfd	Bridge and street widening; reconstruction	$338,000,000		
Various Locations	Metro Bkfd	Signalization	15,000,000		
Various Locations	Rosamond	Street widening; signalization	112,000,000		
Various Locations	Countywide	Transportation Control Measures	386,000,000		
Various Locations	Countywide	Bridge and street widening; reconstruction; signalization	460,000,000		
		Sub-total	**$1,311,000,000**		
2011 through 2035 - Transit					
Project	**Location**	**Scope**	**YOE Cost**	**Project ID**	**Start**
	Metro Bkd	Full size natural gas buses - 120 replacement buses	$45,000,000		
	Metro Bkd	Full size natural gas buses - 120 new buses	45,000,000		
	Various	Midsize natural gas buses - 120 replacement buses	6,000,000		
	Various	Midsize natural gas buses - 120 new buses	6,000,000		
	Various	Mini van / buses - 45 replacement buses	1,800,000		
	Metro Bkfd	2 transfer stations	3,000,000		
	Metro Bkfd	ITS related improvements / upgrades	3,000,000		
	Various	Park and Ride Lots (750 spaces)	3,000,000		
		Sub-total	**$112,800,000**		

TABLE 1 (Continued)

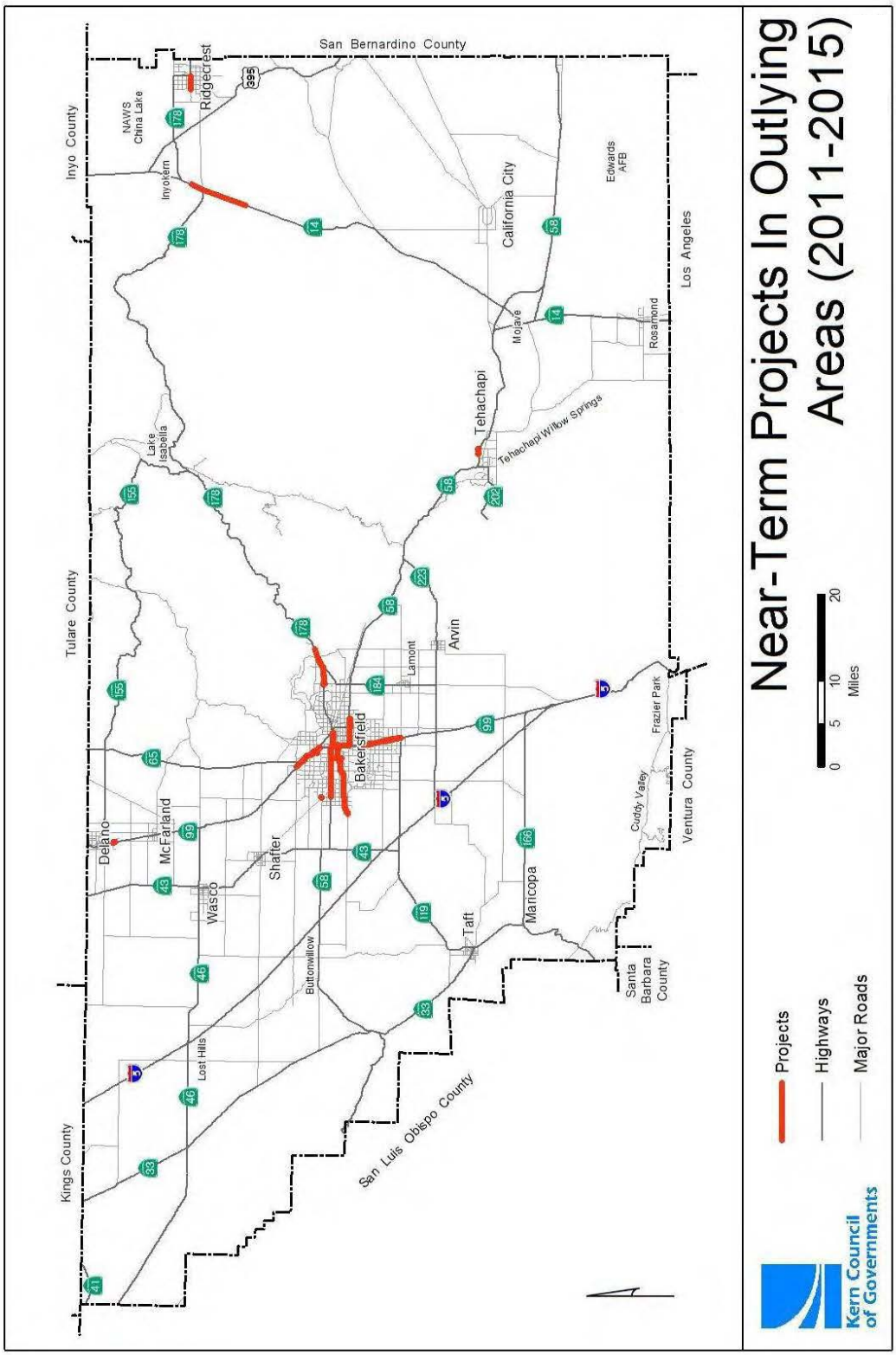
Constrained Program of Projects

2011 through 2035 - Non-motorized					
Project	**Location**	**Scope**	**YOE Cost**	**Project ID**	
Various locations	Metro Bkfd	Construct Class I or Class IIII Bike Path; striping; signage	$11,250,000		
Various locations	Metro Bkfd	Construct Pedestrian Enhancement Improvements	11,250,000		
Various locations	Countywide	Construct Class I or Class IIII Bike Path; striping; signage	7,500,000		
Various locations	Countywide	Construct Pedestrian Enhancement Improvements	7,500,000		
		Sub-total	**$37,500,000**		
2011 through 2035 - Freight Rail					
Project	Location	Scope	YOE Cost	Project ID	Start
Freight Rail	Tehachapi	Double-track sections from Bakersfield to Mojave	$111,700,000		In Progress
Freight Rail	Shafter	Shafter Intermodal Rail Facility	30,000,000		In Progress
		Sub-total	**$141,700,000**		
2011 through 2035 - Passenger Rail*					
Project	**Location**	**Scope**	**YOE Cost**	**Project ID**	**Start**
Passenger Rail	Bakersfield	High Speed Rail Station - Bakersfield	50,000,000		2015
Passenger Rail	Region	High Speed Rail Alignment and Facilities Fresno to Bakersfield	819,500,000		2012
Passenger Rail	Region	High Speed Rail Alignment and Facilities Bakersfield to Palmdale	3,000,000,000		2015
Passenger Rail	Shafter/Wasco	High Speed Rail Heavy Maintenance Facility	450,000,000		2012
		Sub-total	**$4,319,500,000**		

*Passenger Rail Program is currently partially funded through the High Speed Rail Authority and is provided as information. Total is not included in summary.

2011 through 2035 - Summary of Constrained Projects	
Program Category	**Totals**
Major Highway Improvements 2011-2015	**$1,734,196,000**
Major Highway Improvements 2016-2035	**1,989,286,000**
Local Streets and Roads	**1,311,000,000**
Transit	**112,800,000**
Non-motorized	**37,500,000**
Passenger / Freight Rail	**141,700,000**
Grand Total	**$5,326,482,000**

FIGURE 1



VRPA TECHNOLOGIES, INC.

FIGURE 2

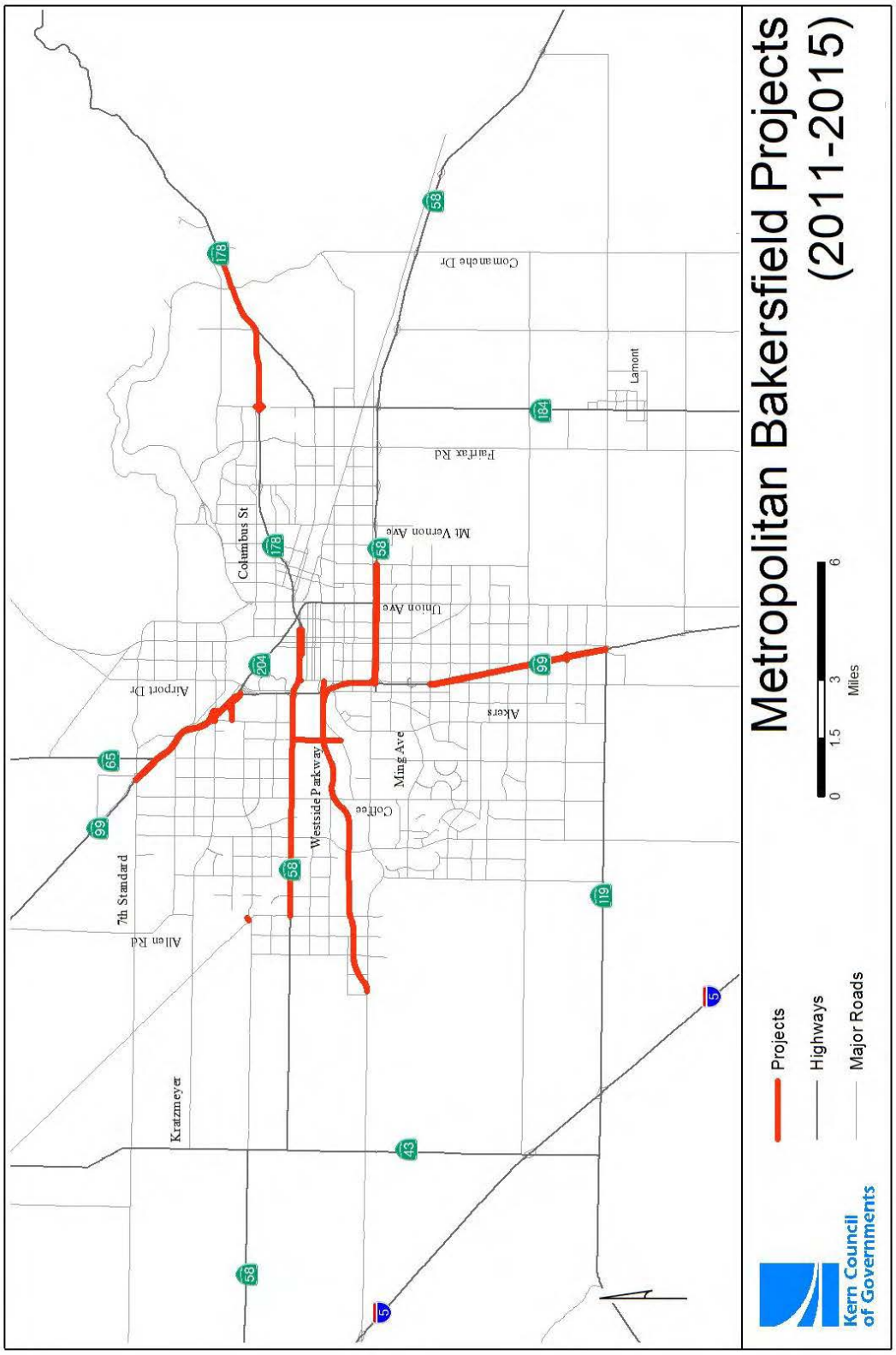

Metropolitan Bakersfield Projects
(2011-2015)
Projects
Highways
Major Roads
0
1.5
3
6
Miles
Kern Council of Governments
Comanche Dr
Lamont
Farfax Rd
Mt Vernon Ave
Union Ave
Columbus St
Airport Dr
Akers
Ming Ave
Westside Parkway
Coffee
7th Standard
Allen Rd
Kratzmeyer
178
58
99
65
204
184
119
43
5

FIGURE 3

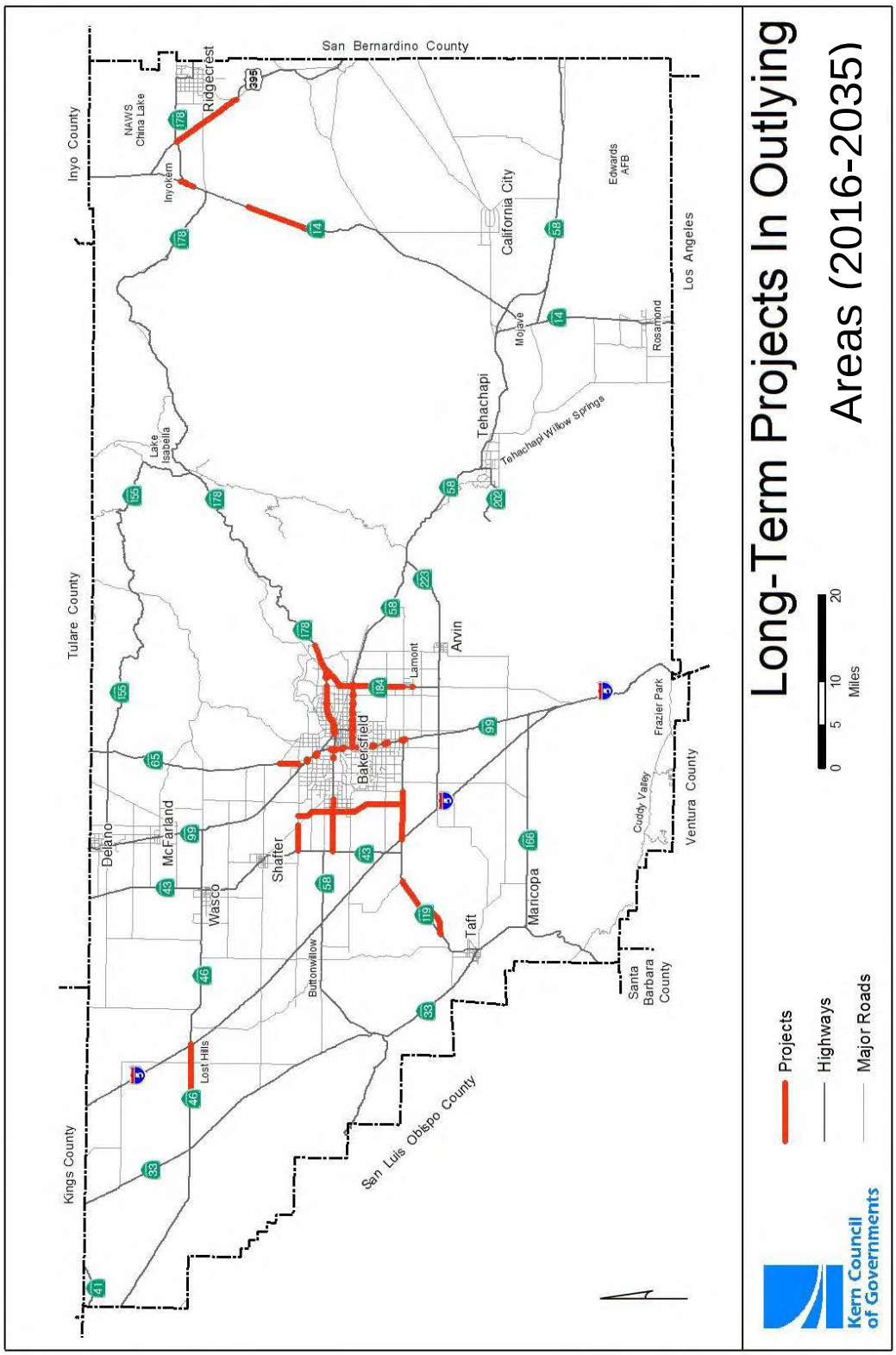
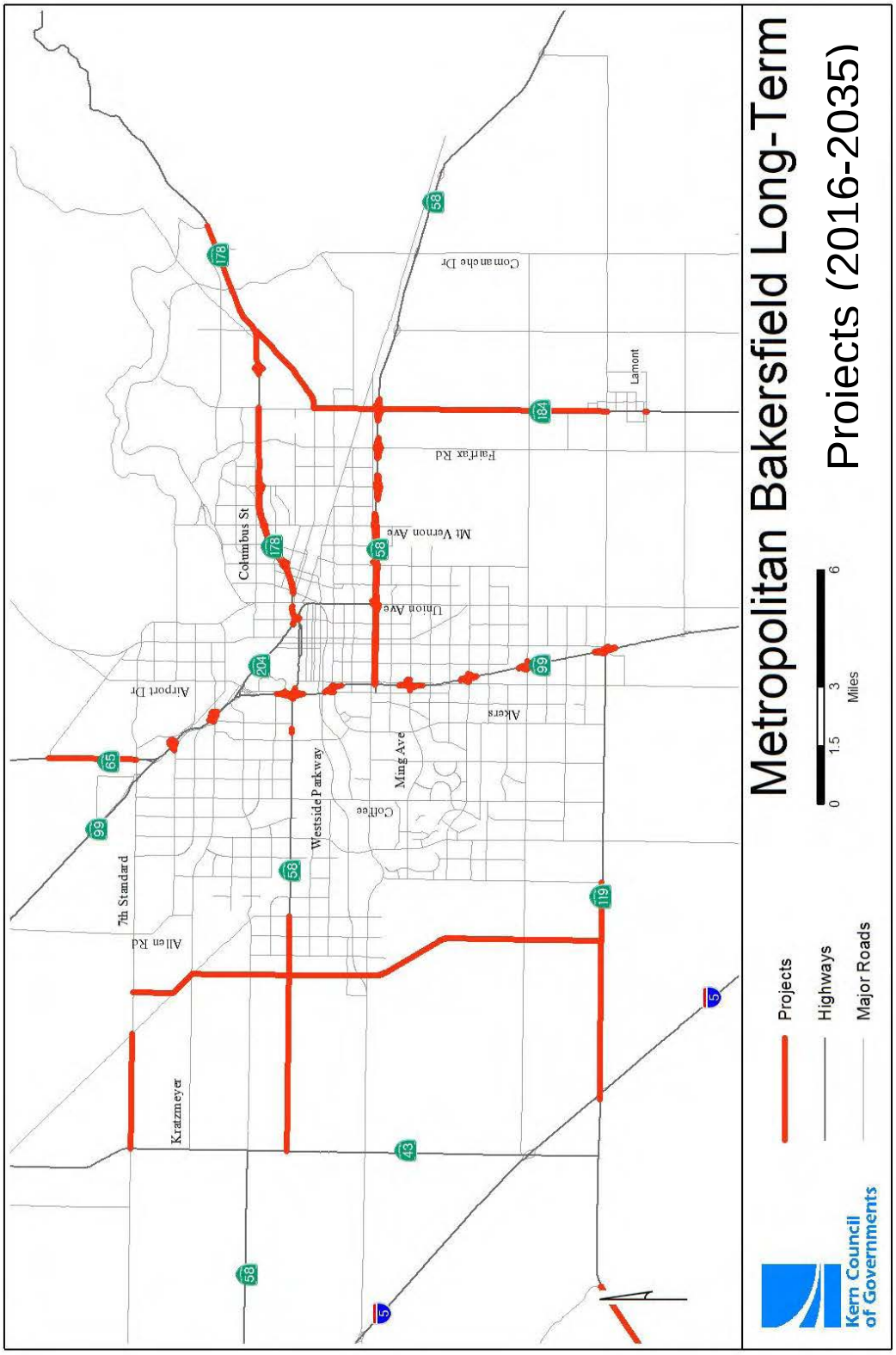

Long-Term Projects In Outlying Areas (2016-2035)
San Bernardino County
Inyo County
Tulare County
Kings County
Los Angeles
Ventura County
Santa Barbara County
San Luis Obispo County
Ridgecrest
NAWS China Lake
Inyokern
California City
Edwards AFB
Mojave
Rosamond
Tehachapi
Tehachapi/Willow Springs
Lake Isabella
Arvin
Lamont
Bakersfield
Frazier Park
Cuddy Valley
Delano
McFarland
Shafter
Wasco
Buttonwillow
Lost Hills
Taft
Maricopa
0 5 10 20
Miles
Projects
Highways
Major Roads
Kern Council of Governments

FIGURE 4


Metropolitan Bakersfield Long-Term Proiects (2016-2035)
Projects
Highways
Major Roads
0
1.5
3
6
Miles
Kern Council of Governments
Comanche Dr
Lamont
Fairfax Rd
Mt Vernon Ave
Columbus St
Union Ave
Airport Dr
Akers
Ming Ave
Westside Parkway
College
7th Standard
Allen Rd
Kratzmeyer
178
58
184
204
99
65
119
5
43

CHANGES TO THE 2011 RTP

The purpose of this SEIR Addendum is to reflect changes and additions to the previously certified 2011 RTP SEIR. Considering CEQA provisions detailed previously, the 2011 RTP Amendment No.1 will not result in further environmental impacts based upon the following conclusions:

- 2011 RTP Amendment No.1 will not cause additional significant environmental effects addressed in the SEIR other than those already identified;
- The effects referenced in the 2011 RTP SEIR will not be substantially more severe as a result of changes identified in the 2011 RTP Amendment No.1; and
- Mitigation measures contained in the 2011 RTP SEIR would continue to be feasible and would reduce environmental effects of changes referenced in this SEIR Addendum.

While the proposed changes to the 2011 RTP may represent "*New information of substantial importance*…" as stated in 15162(a)(3), these changes will not result in one or more significant effects that are not already discussed in the previous EIRs, nor result in impacts that are substantially more severe than shown in the 2011 RTP EIR. Based upon the findings described above, RTP Amendment No.1 will not require major revisions of the 2011 RTP SEIR for the following reasons:

- Potential impacts and mitigation factors have been adequately addressed in the certified 2011 RTP SEIR and reviewed in this SEIR Addendum;
- Each individual transportation project referenced in the 2011 RTP and in RTP Amendment No.1 will be evaluated by the responsible local agency to identify potential environmental effects; and
- After reviewing CEQA Section 15164, it has been determined that the obligation to prepare a Supplemental or Subsequent EIR is not met.

Changes to the timing of projects reflected in Table 1 do not change environmental analysis contained in the SEIR for the base or current year (2011) or the RTP Horizon Year of 2035. The environmental areas that require interim year analysis include both Air Quality and Climate Change sections or Sections 3.3 and 3.5 in the SEIR. To reflect the most current environmental analysis provisions, the following sections (Section 3.3 Air Quality and Section 3.5 Climate Change) have been revised. Based upon the results of this analysis, changes reflected in the 2011 RTP Amendment No.1 will not cause additional significant environmental effects referenced in the 2011 RTP SEIR.

SEIR SECTION 3.3 –AIR QUALITY

Kern County is located in one of the most polluted air basins in the country – the San Joaquin Valley Air Basin (SJVAB). The eastern half of the County is also located in the Mojave Desert Basin (MDB). The surrounding topography includes foothills and mountains to the east, west, and south, which direct air circulation and dispersion patterns. Temperature inversions can trap air within the Valley, thereby preventing the vertical dispersal of air pollutants. In addition to topographic conditions, local climate can also contribute to air quality problems. Climate in Kern County is classified as Mediterranean, with moist cool winters and dry warm summers.

Ozone, classified as a "regional" pollutant, often afflicts areas downwind of the original source of precursor emissions. Ozone can be easily transported by winds from a source area. Peak ozone levels tend to be higher in the southern portion of the Valley, as the prevailing summer winds sweep precursors downwind of northern source areas before concentrations peak. The separate designations reflect the fact that ozone precursor transport depends on daily meteorological conditions.

Other primary pollutants, carbon monoxide (CO), for example, may form high concentrations when wind speed is low. During the winter, Bakersfield experiences cold temperatures and calm conditions that increase the likelihood of a climate conducive to high CO concentrations.

Surface radiant cooling can also cause temperature inversions. On clear winter nights, the ground loses heat at a rapid rate, causing air in contact with it to cool. Once formed, radiation inversions are similar to subsidence inversions with respect to their effects on pollutant dilution. As a result, conditions in Kern County are conducive to the containment of air pollutants.

Regulatory

Air quality in the County is addressed through the efforts of various federal, State, regional, and local government agencies. These agencies work jointly, as well as individually, to improve air quality through legislation, regulations, planning, policy-making, education, and a variety of programs. The agencies primarily responsible for improving the air quality within Kern County are discussed below, along with their individual responsibilities.

- Transportation Conformity Analysis

  Transportation conformity requirements were added to the Federal Clean Air Act (CAA) in the 1990 amendments, and the Environmental Protection Agency (EPA) adopted implementing regulations in 1997. See §176 of the FCAA (42 U.S.C. §7506) and 40 CFR Part 93, Subpart A. Transportation conformity serves much the same purpose as general conformity: it ensures that transportation plans, transportation improvement programs, and projects that are developed, funded, or approved by the United States Department of Transportation (USDOT) or that are recipients of funds under the Federal Transit Agency (FTA) or from the Federal Highway Administration (FHWA), conform to the State Implementation Plan (SIP) as approved or promulgated by EPA.

Currently, transportation conformity applies in nonattainment areas and maintenance areas. Under transportation conformity, a determination of conformity with the applicable SIP must be made by the agency responsible for the project, such as the Metropolitan Planning Organization (MPO), the Council of Governments (COG), or a federal agency. The agency making the determination is also responsible for all the requirements relating to public participation. Generally, a project will be considered in conformance if it is in the transportation improvement plan and the transportation improvement plan is incorporated in the SIP. If an action is covered under transportation conformity, it does not need to be separately evaluated under general conformity.

- Transportation Control Measures

One particular aspect of the SIP development process is the consideration of potential control measures as a part of making progress towards clean air goals. While most SIP control measures are aimed at reducing emissions from stationary sources, some are also typically created to address mobile or transportation sources. These are known as transportation control measures (TCMs). TCM strategies are designed to reduce vehicle miles traveled (VMT) and trips, or vehicle idling and associated air pollution. These goals are achieved by developing attractive and convenient alternatives to single-occupant vehicle use. Examples of TCMs include ridesharing programs, transportation infrastructure improvements such as adding bicycle and carpool lanes, and expansion of public transit.

Federal Regulations

- National Environmental Policy Act (NEPA)

The National Environmental Policy Act (NEPA) provides general information on the effects of federally funded projects. The act was implemented by regulations included in the Code of Federal Regulations (40CFR6). The code requires careful consideration concerning environmental impacts of federal actions or plans, including projects that receive federal funds. The regulations address impacts on land uses and conflicts with state, regional, or local plans and policies, among others. They also require that projects requiring NEPA review seek to avoid or minimize adverse effects of proposed actions and to restore and enhance environmental quality as much as possible.

Federal Agencies

- U.S. Environmental Protection Agency (EPA)

The federal Clean Air Bill (CAB), first adopted in 1967 and periodically amended since then, established federal ambient air quality standards. A 1987 amendment to the Bill set a deadline for the attainment of these standards. That deadline has since passed. The other federal CAB Amendments, passed in 1990, share responsibility with the state in reducing emissions from mobile sources. EPA is responsible for enforcing the 1990 amendments.

The Federal CAA and the national ambient air quality standards identify levels of air quality for six "criteria" pollutants, which are considered the maximum levels of ambient air pollutants considered safe, with an adequate margin of safety, to protect public health and welfare. The six criteria pollutants include ozone, CO, nitrogen dioxide, sulfur dioxide, particulate matter 10 microns in size and smaller (PM_{10}), and lead.

The U.S. EPA requires each state to prepare and submit a SIP that describes how the state will achieve the federal standards by the specified dates, depending on the severity of the air quality within the state or basin. Based on the provisions contained in the 1990 amendment, EPA designated the entire San Joaquin Valley as nonattainment for two pollutants: ozone and particle matter less than 10 microns in size or PM_{10}.

More recently, on April 24, 2004, the EPA reclassified the San Joaquin Valley ozone nonattainment area from its previous severe status to "extreme" at the request of the San Joaquin Valley Air Pollution Control District (SJVAPCD) Board. Kern County is considered to be in non-attainment of ozone and $PM_{2.5}$ standards and attainment for PM_{10} standards.

State Regulations

- CARB Mobile-Source Regulation

The State of California is responsible for controlling emissions from the operation of motor vehicles in the state. Rather than mandating the use of specific technology or the reliance on a specific fuel, the California Air Resources Board's (CARB) motor vehicle standards specify the allowable grams of pollution per mile driven. In other words, the regulations focus on the reductions needed rather than on the manner in which they are achieved. Towards this end, the CARB has adopted regulations, which required auto manufacturers to phase in less polluting vehicles.

- California Clean Air Act

The California Clean Air Act (CCAA) was first signed into law in 1988. The CCAA provides a comprehensive framework for air quality planning and regulation, and spells out, in statute, the state's air quality goals, planning and regulatory strategies, and performance. The CCAA establishes more stringent ambient air quality standards than those included in the federal CAA. CARB is the agency responsible for administering the CCAA. CARB established ambient air quality standards pursuant to the California Health and Safety Code (CH&SC) [§39606(b)], which are similar to the federal standards. The SJVAPCD and the Eastern Kern County Air Pollution Control District (EKCAPCD) are two of 35 air quality management districts that have prepared air quality management plans to accomplish a five percent annual reduction in emissions documenting progress toward the state ambient air quality standards.

- Tanner Air Toxics Act

California regulates toxic air contaminates (TACs) primarily through the Tanner Air Toxics Act (AB 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588). The Tanner Act sets forth a formal procedure for CARB to designate substances as TACs. This includes research, public participation, and scientific peer review before CARB can designate a substance as a TAC. To date, CARB has identified more than 21 TACs and has adopted EPA's list of hazardous air pollutants (HAPs) as TACs. Most recently, diesel PM was added to the CARB list of TACs. Once a TAC is identified, CARB then adopts an Airborne Toxics Control Measure (ATCM) for sources that emit that particular TAC. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure below that threshold. If there is no safe threshold, the measure must incorporate Best Available Control Technology (BACT) to minimize emissions.

AB 2588 requires that existing facilities, which emit toxic substances above a specified level, prepare a toxic-emission inventory, prepare a risk assessment if emissions are significant, notify the public of significant risk levels, and prepare and implement risk reduction measures. CARB has adopted diesel exhaust control measures and more stringent emission standards for various on-road mobile sources of emissions, including transit buses and off-road diesel equipment (e.g., tractors, generators). In February 2000, CARB adopted a new public-transit bus-fleet rule and emission standards for new urban buses. These rules and standards provide for (1) more stringent emission standards for some new urban bus engines, beginning with 2002 model year engines; (2) zero-emission bus demonstration and purchase requirements applicable to transit agencies; and (3) reporting requirements under which transit agencies must demonstrate compliance with the urban transit bus fleet rule. Upcoming milestones include the low-sulfur diesel-fuel requirement, and tighter emission standards for heavy-duty diesel trucks (2007) and off-road diesel equipment (2011) nationwide.

- California Environmental Quality Act (CEQA)

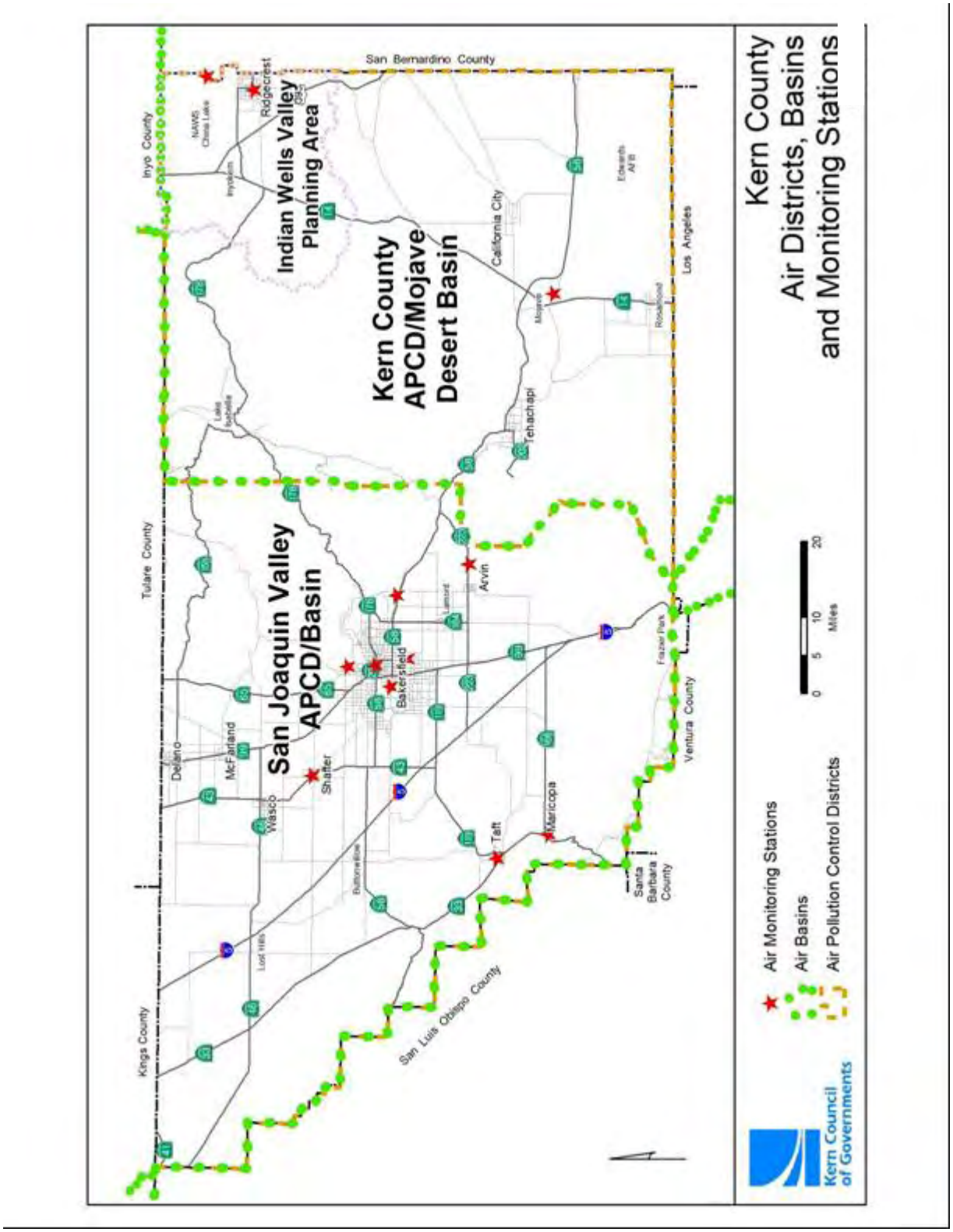
The California Environmental Quality Act (CEQA) defines a significant impact on the environment as a substantial, or potentially substantial, adverse change in the physical conditions within the area affected by the project.

State Agencies

- California Air Resources Board (CARB)

In 1988, the State of California passed the CCAA (State 1988 Statutes, Chapter 1568) that established more stringent state ambient air quality standards, and set forth a program for their achievement. State air basins are established by CARB. CARB implements state ambient air quality standards, as required in the CCAA, and cooperate with the federal government in implementing pertinent sections of the federal CAB Amendments. Further, CARB has responsibility for controlling stationary and mobile source air pollutant emissions throughout the state.

FIGURE 5


Kern County
Air Districts, Basins
and Monitoring Stations
Air Monitoring Stations
Air Basins
Air Pollution Control Districts
0 5 10 20
Miles
Kern Council
of Governments
San Joaquin Valley
APCD/Basin
Kern County
APCD/Mojave
Desert Basin
Indian Wells Valley
Planning Area
San Bernardino County
Inyo County
Tulare County
Kings County
San Luis Obispo County
Santa Barbara County
Ventura County
Los Angeles
Ridgecrest
California City
Mojave
Tehachapi
Arvin
Lamont
Bakersfield
Delano
McFarland
Wasco
Shafter
Taft
Maricopa
Frazier Park

Kern County is in the CARB-designated, SJVAB and the MDB. A map of the SJVAB and MDB in Kern County is provided in Figure 5. In addition to Kern County, the SJVAB includes Fresno, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare Counties. The MDB is located within Kern, San Bernardino, Los Angeles and Riverside Counties.

Kern County is also located in the federally designated area of the Indian Wells Valley Planning Area, and the portion of the San Joaquin Valley (SJV) PM_{10} nonattainment area that lies within the EKCAPCD (this area is not included in the SJV 2007 PM_{10} Maintenance Plan and has been labeled the East Kern PM_{10} Area). The MDB is currently designated as nonattainment for the National Ambient Air Quality Standards (NAAQS) for 8-hour ozone; whereas the Indian Wells Valley Planning area is designated as a maintenance area for PM_{10}.

Applicable federal and state standards are provided in Table 2.

Activities of the SJVAPCD and the EKCAPCD include the preparation of plans for the attainment of ambient air quality standards, adoption and enforcement of rules and regulations concerning sources of air pollution, issuance of permits for stationary sources of air pollution, inspection of stationary sources of air pollution and response to citizen complaints, monitoring of ambient air quality and meteorological conditions, and implementation of programs and regulations required by the CAA and CCAA.

- Application to the SJVAPCD

  The SJVAPCD has prepared the *2007 Ozone Plan* to achieve Federal and State standards for improved air quality in the SJVAB regarding ozone. The *2007 Ozone Plan* provides a comprehensive list of regulatory and incentive-based measures to reduce emissions of ozone and particulate matter precursors throughout the SJVAB. The *2007 Ozone Plan* calls for major advancements in pollution control technologies for mobile and stationary sources of air pollution. The *2007 Ozone Plan* also calls for a 75-percent reduction in ozone-forming oxides of nitrogen emissions.

  The SJVAPCD has also prepared the *2007 PM_{10} Maintenance Plan and Request for Redesignation* (2007 PM_{10} Plan). On April 24, 2006, the SJVAPCD submitted a Request for Determination of PM_{10} Attainment for the Basin to CARB. CARB concurred with the request and submitted the request to the EPA on May 8, 2006.

  On October 30, 2006, the EPA issued a Final Rule determining that the Basin had attained the NAAQS for PM_{10}. However, the EPA noted that the Final Rule did not constitute a redesignation to attainment until all of the FCAA requirements under Section 107(d)(3) were met.

  The SJVAPCD has prepared the *2008 PM.2.5 Plan* to achieve federal and State standards for improved air quality in the SJVAB. The *2008 PM.2.5 Plan* provides a comprehensive list of regulatory and incentive-based measures to reduce $PM_{2.5}$.

TABLE 2

Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards [1]		Federal Standards [2]		
		Concentration [3]	Method [4]	Primary [3,5]	Secondary [3,6]	Method [7]
Ozone (O_3)	1 Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m^3)		0.075 ppm (147 µg/m^3)		
Respirable Particulate Matter (PM10)	24 Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		—		
Fine Particulate Matter (PM2.5)	24 Hour	No Separate State Standard		35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	15.0 µg/m^3		
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m^3)	None	Non-Dispersive Infrared Photometry (NDIR)
	1 Hour	20 ppm (23 mg/m^3)		35 ppm (40 mg/m^3)		
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		—	—	—
Nitrogen Dioxide (NO_2)[8]	Annual Arithmetic Mean	0.030 ppm (57 µg/m3)	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m^3)	Same as Primary Standard	Gas Phase Chemiluminescence
	1 Hour	0.18 ppm (339 µg/m^3)		0.100 ppm	0.053 ppm (100 µg/m^3)	
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	—	Ultraviolet Fluorescence	0.030 ppm (80 µg/m^3)	—	Spectrophotometry (Pararosaniline Method)
	24 Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (365 µg/m^3)	—	
	3 Hour	—		—	0.5 ppm (1300 µg/m^3)	
	1 Hour	0.25 ppm (655 µg/m^3)		—	—	—
Lead[9]	30 Day Average	1.5 µg/m^3	Atomic Absorption	—	—	—
	Calendar Quarter	—		1.5 µg/m^3	Same as Primary Standard	High Volume Sampler and Atomic Absorption
	Rolling 3-Month Average[10]	—		0.15 µg/m^3		
Visibility Reducing Particles	8 Hour	Extinction coefficient of 0.23 per kilometer — visibility of ten miles or more (0.07 — 30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape.		No Federal Standards		
Sulfates	24 Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride[9]	24 Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

See footnotes on next page ...

For more information please call ARB-PIO at (916) 322-2990

California Air Resources Board (01/27/10)

Footnotes:

1. *California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour),nitrogen dioxide, suspended particulate matter— PM_{10}, $PM_{2.5}$, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.*
2. *National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m3 is equal to or less than one. For $PM_{2.5}$, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact U.S. EPA for further clarification and current federal policies.*
3. *Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.*
4. *Any equivalent procedure, which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.*
5. *National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.*
6. *National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.*
7. *Reference method as described by the EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the EPA.*
8. *To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010). Note that the (ppm). To directly compare the national standards to the California standards the units can be converted from ppb to ppm. In this case, the national standards of 53 ppb and 100 ppb are identical to 0.053 ppm and 0.100 ppm, respectively.*
9. *On June 2, 2010, the U.S. EPA established a new 1-hour SO2 standard, effective August 23, 2010, which is based on the 3-year average of the annual 99th percentile of 1-hour daily maximum. EPA also proposed a new automated Federal Reference Method (FRM) using ultraviolet technology, but will retain the older pararosaniline methods until the new FRM have adequately permeated State monitoring networks. The EPA also revoked both the existing 24-hour SO2 standard of 0.14 ppm and the annual primary SO2 standard of 0.030 ppm, effective August 23, 2010. The secondary SO2 standard was not revised at that time; however, the secondary standard is undergoing a separate review by EPA. Note that the new standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the new primary national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.*
10. *The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.*
11. *National lead standard, rolling 3-month average: final rule signed October 15, 2008.*

For more information please call ARB-PIO at (916) 322-2990 California Air Resources Board (09/08/10)

In addition to the *2007 Ozone Plan, the 2008 $PM_{2.5}$ Plan,* and the *2007 PM_{10} Plan*, the SJVAPCD prepared the *Guide for Assessing and Mitigation Air Quality Impacts* (GAMAQI). The GAMAQI is an advisory document that provides lead agencies, consultants, and project applicants with analysis guidance and uniform procedures for addressing air quality impacts in environmental documents.

Local jurisdictions are not required to utilize the methodology outlined therein. This document describes the criteria that SJVAPCD uses when reviewing and commenting on the adequacy of environmental documents. The GAMAQI recommends thresholds for determining whether or not projects would have significant adverse environmental impacts, identifies methodologies for predicting project emissions and

impacts, and identifies measures that can be used to avoid or reduce air quality impacts. An update of the GAMAQI was approved on January 10, 2002, and is used as a guidance document for this analysis.

The SJVAPCD 2007 *Ozone, 2007 PM_{10}, 2008 $PM_{2.5}$* as well as the *2004 Revision to the California State Implementation Plan* contain statewide technology controls mandated by CARB. A summary of the CARB mandated control measures applicable to the 2011 RTP and Amendment No. 1 can be found in the Kern COG 2011 Conformity Analysis for the 2011 Federal Transportation Improvement Program and the Draft 2011 Regional Transportation Plan (Conformity Analysis) Amendment No.1.

The Draft Conformity Analysis can be found at the following link: http://www.kerncog.org

The SJVAPCD Plans identified above represent that SJVAPCD's plan to achieve both State and federal air quality standards. The regulations and incentives contained in these documents must be legally enforceable and permanent. These plans break emissions reductions and compliance into different emissions source categories. For this SEIR Addendum, only on-road mobile sources are considered as the 2011 RTP and the 2011 RTP Amendment No. 1 do not impact the implementation of any SJVAPCD regulations or incentives on other emissions source categories.

Each of the SJVAPCD plans (2007 Ozone Plan, 2008 $PM_{2.5}$ Plan, and 2007 PM_{10} Maintenance Plan, which relies on the 2003 PM_{10} Plan for emissions reductions measures) identifies a "budget" for measuring progress toward achieving attainment of the national air quality standard. A "budget" is, in effect, an emissions "threshold" or "not to exceed value" for specific years in which progress toward attainment of the standard must be measured. These specific years can also be described as "budget years" and are established to ensure achievement of the "budget" to demonstrate continued progress toward attainment of the national air quality standard. The term "base year" also reflects a "threshold" or "not to exceed" value against which future emissions from the 2011 RTP and the 2011 RTP Amendment No. 1 are measured.

The EPA defines specific years in which attainment of the federal standards must be reached, and therefore each of these SJVAPCD plans for which the SJVAB is nonattainment contains different "budget years" in which progress must be made toward achievement of the federal standards. These years are documented below. Again the emissions budgets in Tables 2 through 6 below reflect "thresholds" or "not to exceed" values in the "budget years" for the identified pollutant in order to achieve attainment.

TABLE 3
On-Road Motor Vehicle CO Emissions Budgets
(Winter tons/day)

County	2018 Emissions (Winter Tons/Day)
Kern	180

Source: San Joaquin Valley Air Pollution Control District, 2007

TABLE 4
On-Road Motor Vehicle Budgets from the 2007 Ozone Plan
(Summer tons/day)

County	2011		2014		2017	
	ROG	NOx	ROG	NOx	ROG	NOx
Kern	15.7	79.4	13.5	64.1	11.6	49.5

Source: San Joaquin Valley Air Pollution Control District, "2007 Ozone Plan", 2007

TABLE 5
On-Road Motor Vehicle PM_{10} Emissions Budgets
(Tons per average annual day)

County	2020	
	PM-10	NOx
Kern	14.7	39.5

Source: San Joaquin Valley Air Pollution Control District, "2007 PM_{10} Maintenance Plan", 2007

TABLE 6
On-Road Motor Vehicle $PM_{2.5}$ Emissions Budgets
(Tons per average annual day)

County	2012		2014	
	PM2.5	NOx	PM2.5	NOx
Kern	3.0	74.2	1.4	41.6

Source: San Joaquin Valley Air Pollution Control District, "2008 PM.2.5 Plan", 2008

The SJVAPCD has adopted numerous rules and regulations to implement its air quality plans. Following are significant rules that will apply to the proposed project.

- Regulation VIII – Fugitive PM_{10} Prohibitions

  Regulation VIII is comprised of District Rules 8011 through 8081, which are designed to reduce PM_{10} emissions (predominantly dust/dirt) generated by human activity, including construction and demolition activities, road construction, bulk materials storage, paved and unpaved roads, carryout and track out, landfill operations, etc.

- Rule 8021 – Construction, Demolition, Excavation, and Other Earthmoving Activities

  District Rule 8021 requires owners or operators of construction projects to submit a Dust Control Plan to the District if at any time the project involves non-residential developments of five or more acres of disturbed surface area or moving, depositing, or relocating of more than 2,500 cubic yards

per day of bulk materials on at least three days of the project. The proposed project will meet these criteria and will be required to submit a Dust Control Plan to the District in order to comply with this rule.

- Rule 4641 – Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations

  If asphalt paving will be used, then paving operations of the proposed project will be subject to Rule 4641. This rule applies to the manufacture and use of cutback asphalt, slow cure asphalt and emulsified asphalt for paving and maintenance operations.

➢ Application to the EKCAPCD

Tables 7 and 8 below provide emissions budgets for the EKCAPCD portion of the MDB.

TABLE 7
Mojave Desert (Eastern Kern County)
Ozone Emissions Budgets
(Summer tons/day)

County	2008	
	ROG	NOx
Kern - Eastern	5	18

Source: EKCAPCD Website.

TABLE 8
Kern County Indian Wells Area
PM_{10} Emissions Budgets
(Summer tons/day)

County	2001	2013
Kern - Indian Wells Valley	1.6	1.7

Source: EKCAPCD Website.

Regional Agencies

- San Joaquin Valley Air Pollution Control District (SJVAPCD)

The SJVAPCD is the agency responsible for monitoring and regulating air pollutant emissions from stationary, area, and indirect sources within Kern County and throughout the SJVAB. The SJVAPCD also has responsibility for monitoring air quality and setting and enforcing limits for source emissions. CARB is the agency with the

legal responsibility for regulating mobile source emissions. The SJVAPCD is precluded from such activities under state law. The SJVAPCD was formed in mid-1991 and prepared and adopted the *San Joaquin Valley Air Quality Attainment Plan* (AQAP), dated January 30, 1992, in response to the requirements of the CCAA. The CCAA requires each non-attainment district to reduce pertinent air contaminants by at least five percent (5%) per year until new, more stringent, 1988 state air quality standards are met. The SJVAB consists of eight counties, from San Joaquin County in the north to Kern County in the south. SJVAPCD and CARB maintain numerous air quality monitoring sites throughout each County in the Air Basin to measure ozone, $PM_{2.5}$, and PM_{10}. It is important to note that the federal ozone 1-hour standard was revoked by the EPA and is no longer applicable for federal standards. Data obtained from the monitoring sites throughout the SJVAB between 2006 and 2009 is summarized in Tables 9 through 11. Tables 12 through 14 reflect the ambient air quality classifications for monitoring sites in Kern County.

TABLE 9
SJVAB Ambient Air Quality Monitoring Data Summary - Ozone 2006-2009

Year	Days > Standard				1-Hour Observations			8-Hour Averages				Year Coverage	
	State		National			State	Nat'l	State		National			
	1-Hr	8-Hr	1-Hr	'08 8-Hr	Max.	D.V.[1]	D.V.[2]	Max.	D.V.[1]	Max.	'08 D.V.[2]	Min	Max
2009	82	122	4	98	0.135	0.14	0.14	0.110	0.124	0.110	0.105	0	100
2008	95	150	19	127	0.157	0.15	0.136	0.132	0.124	0.132	0.108	65	100
2007	69	138	3	110	0.138	0.14	0.135	0.110	0.120	0.110	0.107	85	100
2006	90	141	18	120	0.141	0.14	0.135	0.122	0.117	0.121	0.110	58	100

Notes: All concentrations expressed in parts per million. The national 1-hour ozone standard was revoked in June 2005 and is no longer in effect. Statistics related to the revoked standard are shown in italics. D.V. [1] = State Designation Value. D.V. [2]= National Design Value.
Source: California Air Resources Board (ADAM) Air Pollution Summaries, 2006, 2007, 2008, & 2009.

TABLE 10
SJVAB Ambient Air Quality Monitoring Data Summary - $PM_{2.5}$ 2006-2009

Year	Est. Days > Nat'l Std.	Annual Average		Nat'l Ann. Std. D.V.[1]	State Annual D.V.[2]	Nat'l Std. 98th Percentile	Nat'l 24-Hr Std. D.V.[1]	High 24-Hour Average		Year Coverage	
		Nat'l	State					Nat'l	State	Min	Max
2009	42.9	19.3	21.2	21.5	25	65.4	70	82.3	85.5	37	100
2008	66.7	23.5	21.2	21.5	25	72.3	70	100.3	118.8	11	100
2007	65.6	22.0	25.2	20.3	25	73.0	69	103.8	154.0	79	98
2006	38.7	19.3	21.6	18.9	22	64.7	64	87.0	88.1	83	100

Notes: All concentrations expressed in parts per million. State and national statistics may differ for the following reasons: State statistics are based on California approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods. State and national statistics may therefore be based on different samplers. State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria. D.V. [1] = State Designation Value. D.V. [2]= National Design Value. * Means there was insufficient (or no) data available to determine the value.
Source: California Air Resources Board (ADAM) Air Pollution Summaries, 2006, 2007, 2008, & 2009.

TABLE 11
SJVAB Ambient Air Quality Monitoring Data Summary - PM_{10} 2006-2009

Year	Est. Days > Std.		Annual Average		3-Year Average		High 24-Hr Average		Year
	Nat'l	State	Nat'l	State	Nat'l	State	Nat'l	State	Coverage
2009	1.9	123.4	*	46.5	*	56	423.8	139.5	100
2008	4.8	182.2	59.7	55.9	57	56	358.8	353.5	100
2007	1.4	145.1	54.8	48.5	51	56	172.0	135.0	100
2006	4.2	166.8	55.4	56.4	47	56	303.9	255.0	100

Notes: The national annual average PM_{10} standard was revoked in December 2006 and is no longer in effect. An exceedance is not necessarily a violation. Statistics may include data that are related to an exceptional event. State and national statistics may differ for the following reasons: State statistics are based on California approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods. State and national statistics may therefore be based on different samplers. National statistics are based on standard conditions. State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.
* Means there was insufficient (or no) data available to determine the value.
Source: California Air Resources Board (Adam) Air Pollution Summaries, 2006, 2007, 2008 & 2009.

TABLE 12
Maximum Pollutant Levels at Bakersfield's Golden State Highway Monitoring Station

Pollutant	Time Averaging	2006 Maximums	2007 Maximums	2008 Maximums	2009 Maximums	Standards National	Standards State
Ozone (O_3)	1 hour	0.108 ppm	0.127 ppm	0.115 ppm	*	-	0.09 ppm
Ozone (O_3)	8 hour	0.096 ppm	0.102 ppm	0.105 ppm	*	0.08 ppm	-
Carbon Monoxide (CO)	8 hour	2.19 ppm	1.97 ppm	2.17 ppm	1.51 ppm	9.0 ppm	9.0 ppm
Nitrogen Dioxide (NO_2)	1 hour	0.076 ppm	0.073 ppm	0.075 ppm	0.073 ppm	-	.025 ppm
Nitrogen Dioxide (NO_2)	Annual Average	0.021 ppm	0.020 ppm	0.019 ppm	0.018 ppm	0.053 ppm	-
Particulates (PM_{10})	24 hour	157.0 mg/m³	131.0 mg/m³	267.4 mg/m³	138.2 mg/m³	150 mg/m³	50 mg/m³
Particulates (PM_{10})	Federal Annual Arithmetic Mean	55.4 mg/m³	54.8 mg/m³	59.7 mg/m³	*	50 mg/m³	20 mg/m³
Particulates ($PM_{2.5}$)	24 hour	76.4 mg/m³	86.6 mg/m³	65.3 mg/m³	71.5 mg/m³	65 mg/m³	-
Particulates ($PM_{2.5}$)	Federal Annual Arithmetic Mean	18.6 mg/m³	19.9 mg/m³	17.8 mg/m³	14.3 mg/m³	15 mg/m³	12 mg/m³

Source: CARB Website, 2011

TABLE 13
Maximum Pollutant Levels at Bakersfield's 5558 California Monitoring Station

Pollutant	Time Averaging	2006 Maximums	2007 Maximums	2008 Maximums	2009 Maximums	Standards National	Standards State
Ozone (O_3)	1 hour	0.123 ppm	0.117 ppm	0.127 ppm	0.120 ppm	-	0.09 ppm
Ozone (O_3)	8 hour	0.110 ppm	0.106 ppm	0.111 ppm	0.094 ppm	0.08 ppm	-
Carbon Monoxide (CO)[a]	8 hour	2.19 ppm	1.97 ppm	2.17 ppm	1.51 ppm	9.0 ppm	9.0 ppm
Nitrogen Dioxide (NO_2)	1 hour	0.073 ppm	0.072 ppm	0.083 ppm	0.069 ppm	-	.025 ppm
Nitrogen Dioxide (NO_2)	Annual Average	0.017 ppm	0.017 ppm	0.016 ppm	0.016 ppm	0.053 ppm	-
Particulates (PM_{10})	24 hour	153.0 mg/m³	115.0 mg/m³	262.3 mg/m³	94.5 mg/m³	150 mg/m³	50 mg/m³
Particulates (PM_{10})	Federal Annual Arithmetic Mean	48.9 mg/m³	45.6 mg/m³	53.6 mg/m³	*	50 mg/m³	20 mg/m³
Particulates ($PM_{2.5}$)	24 hour	77.7 mg/m³	85.8 mg/m³	99.3 mg/m³	195.5 mg/m³	65 mg/m³	-
Particulates ($PM_{2.5}$)	Federal Annual Arithmetic Mean	18.7 mg/m³	21.9 mg/m³	21.9 mg/m³	19.0 mg/m³	15 mg/m³	12 mg/m³

Source: CARB Website, 2011

TABLE 14
Maximum Pollutant Levels at Maricopa's Stanislaus Monitoring Station

Pollutant	Time Averaging	2006 Maximums	2007 Maximums	2008 Maximums	2009 Maximums	Standards National	Standards State
Ozone (O_3)	1 hour	0.104 ppm	0.097 ppm	0.097 ppm	0.102 ppm	-	0.09 ppm
Ozone (O_3)	8 hour	0.094 ppm	0.090 ppm	0.089 ppm	0.095 ppm	0.08 ppm	-
Carbon Monoxide (CO)[a]	8 hour	2.19 ppm	1.97 ppm	2.17 ppm	1.51 ppm	9.0 ppm	9.0 ppm
Nitrogen Dioxide (NO_2)[b]	1 hour	0.073 ppm	0.072 ppm	0.083 ppm	0.069 ppm	-	.025 ppm
Nitrogen Dioxide (NO_2)[b]	Annual Average	0.017 ppm	0.017 ppm	0.016 ppm	0.016 ppm	0.053 ppm	-
Particulates (PM_{10})[b]	24 hour	153.0 mg/m³	115.0 mg/m³	262.3 mg/m³	94.5 mg/m³	150 mg/m³	50 mg/m³
Particulates (PM_{10})[b]	Federal Annual Arithmetic Mean	48.9 mg/m³	45.6 mg/m³	53.6 mg/m³	*	50 mg/m³	20 mg/m³
Particulates ($PM_{2.5}$)[b]	24 hour	77.7 mg/m³	85.8 mg/m³	99.3 mg/m³	195.5 mg/m³	65 mg/m³	-
Particulates ($PM_{2.5}$)[b]	Federal Annual Arithmetic Mean	18.7 mg/m³	21.9 mg/m³	21.9 mg/m³	19.0 mg/m³	15 mg/m³	12 mg/m³

Source: CARB Website, 2011

Table 15 identifies the District's attainment status. As indicated, the SJVAB is nonattainment for Ozone (1 hour and 8 hour) and PM (2.5 microns in size). In accordance with the federal CAA, EPA uses the design value at the time of standard promulgation to assign nonattainment areas to one of several classes that reflect the severity of the nonattainment problem; classifications range from marginal nonattainment to extreme nonattainment. The federal CAA contains provisions for changing the classifications using factors such as clean air progress rates and requests from States to move areas to a higher classification. On April 16, 2004 EPA issued a final rule classifying the SJVAB as extreme nonattainment for Ozone, effective May 17, 2004 (69 FR 20550). The (federal) 1-hour ozone standard was revoked on June 6, 2005. However, many of the requirements in the 1-hour attainment plan (SIP) continue to apply to the SJVAB. The current ozone plan is the (federal) 8-hour ozone plan adopted in 2007. The SJVAB was reclassified from a "serious" nonattainment area for the 8-hour ozone standard to "extreme' effective June 4, 2010.

TABLE 15
San Joaquin Valley Air Basin – District Attainment Status

Source: CARB

Pollutant	Designation/Classification	
	Federal NAAQS	State Ambient Air Quality Standards
Ozone - 1 Hour	No Federal Standard	Non-attainment/Severe
Ozone - 8 Hour (0.08 ppm)	Non-attainment	No State Standard
PM_{10}	Attainment	Non-attainment
$PM_{2.5}$	Non-attainment	Non-attainment
Carbon Monoxide	Unclassified/Attainment	Attainment
Nitrogen Dioxide	Unclassified/Attainment	Attainment
Sulfur Dioxide	Unclassified	Attainment
Lead Particulates	No Federal Standard	Attainment

Notes:

National Designation Categories

- Non-Attainment Area: Any area that does not meet (or that contributes to ambient air quality in a nearby area that does not meet) the national primary or secondary ambient air quality standard for the pollutant.
- Unclassified/Attainment Area: Any area that cannot be classified on the basis of available information as meeting or not meeting the national primary or secondary ambient air quality standard for the pollutant or meets the national primary or secondary ambient air quality standard for the pollutant.

State Designation Categories

- Unclassified: A pollutant is designated unclassified if the data are incomplete and do not support a designation of attainment or non-attainment.
- Attainment: A pollutant is designated attainment if the State standard for that pollutant was not violated at any site in the area during a three-year period.
- Non-attainment: A pollutant is designated non-attainment if there was at least one violation of a State standard for that pollutant in the area.
- Non-Attainment/Transitional: A subcategory of the non-attainment designation. An area is designated non-attainment/transitional to signify that the area is close to attaining the standard for the pollutant.

- Eastern Kern County Air Pollution Control District (EKCAPCD)

The EKCAPCD is the agency responsible for monitoring and regulating air pollutant emissions from stationary, area, and indirect sources within eastern Kern County within the MDB. The EKCAPCD also has responsibility for monitoring air quality and setting and enforcing limits for source emissions. CARB is the agency with the legal responsibility for regulating mobile source emissions. The EKCAPCD is precluded from such activities under state law.

Table 16 contains the ambient air quality classifications for a monitoring site in the rural area of the MDB. Table 17 identifies the EKCAPCD's attainment status.

TABLE 16
Maximum Pollutant Levels at Mojave's 923 Poole Street Monitoring Station

Pollutant	Time Averaging	2006 Maximums	2007 Maximums	2008 Maximums	2009 Maximums	Standards National	Standards State
Ozone (O_3)	1 hour	0.109 ppm	0.092 ppm	0.112 ppm	0.101 ppm	-	0.09 ppm
Ozone (O_3)	8 hour	0.101 ppm	0.084 ppm	0.102 ppm	0.084 ppm	0.08 ppm	-
Carbon Monoxide (CO)[a]	8 hour	1.60 ppm	1.25 ppm	1.04 ppm	1.00 ppm	9.0 ppm	9.0 ppm
Nitrogen Dioxide (NO_2)[a]	1 hour	0.066 ppm	0.064 ppm	0.062 ppm	0.065 ppm	-	.025 ppm
Nitrogen Dioxide (NO_2)[a]	Annual Average	0.015 ppm	0.015 ppm	0.013 ppm	*	0.053 ppm	-
Particulates (PM_{10})	24 hour	65 mg/m³	73 mg/m³	154 mg/m³	68 mg/m³	150 mg/m³	50 mg/m³
Particulates (PM_{10})	Federal Annual Arithmetic Mean	21.4 mg/m³	22.1 mg/m³	24.4 mg/m³	*	50 mg/m³	20 mg/m³
Particulates ($PM_{2.5}$)	24 hour	21.3 mg/m³	21.1 mg/m³	19.1 mg/m³	12.7 mg/m³	65 mg/m³	-
Particulates ($PM_{2.5}$)	Federal Annual Arithmetic Mean	--	6.1 mg/m³	6.8 mg/m³	5.1 mg/m³	15 mg/m³	12 mg/m³

Source: CARB 2011

TABLE 17
Mojave Air Basin – District Attainment Status

Pollutant	Designation/Classification			
	National Ambient Air Quality Standards (NAAQS)			State Ambient Air Quality Standards
	KCAPCD	Kern River / Cummings [1,2]	Indian Wells Valley[3,4,5]	
Ozone - 1 Hour	Attainment[6,7]	Part of KCAPCD Area	Part of KCAPCD Area	Moderate Nonattainment
Ozone - 8 Hour (0.08 ppm)	Nonattainment	Part of KCAPCD Area	Unclassifiable/Attainment	Nonattainment
PM10	Unclassifiable/Attainment	Serious Nonattainment	Attainment Maintenance	Nonattainment
PM2.5	Unclassifiable/Attainment	Part of KCAPCD Area	Part of KCAPCD Area	Unclassified
Carbon Monoxide	Unclassifiable/Attainment	Part of KCAPCD Area	Part of KCAPCD Area	Unclassified
Nitrogen Dioxide	Unclassified	Part of KCAPCD Area	Part of KCAPCD Area	Attainment
Sulfur Dioxide	Unclassified	Part of KCAPCD Area	Part of KCAPCD Area	Attainment
Lead Particulates	No Designation	Part of KCAPCD Area	Part of KCAPCD Area	Attainment

Source: EKCAPCD Website

1 Kern River Valley, Bear Valley and Cummings Valley were previously included in the federally designated San Joaquin Valley PM_{10} Serious Nonattainment Area, but was made a separate nonattainment area in 2008
2 Kern River Valley, Bear Valley and Cummings Valley are included with the KCAPCD for all NAAQS other than PM_{10}
3 For PM_{10} and first 8-hour ozone NAAQS(0.08 ppm) the Indian Wells Valley was split-out as a separate planning area from the rest of the KCAPCD
4 Indian Wells Valley is only a separate area for the PM_{10} and first 8-hour Ozone NAAQS (0.08 ppm) and is part of the KCAPCD for all other NAAQS
5 Indian Wells Valley is included with the rest of the KCAPCD in the proposed designated nonattainment area under the 2007 revision of the 8-Ozone NAAQS (0.075)
6 1-hour ozone NAAQS was revoked effective June 15, 2004
7 EKCAPCD was attainment of 1-hour ozone NAAQS at time of revocation; the proposed Attainment Maintenance designation's effective date was June 21, 2004, therefore it did not become effective

For determining whether an area is in attainment of the PM_{10} and eight-hour ozone NAAQS, the Indian Wells Valley has been considered a separate area from the rest of the EKCAPCD and Mojave Air Basin. The Kern River Valley and the western part of the Tehachapi Region were originally part of the SJVAB and the SJVAPCD. CARB modified the air basins in 1995 when it moved these areas into the MDB and gave the

EKCAPCD jurisdiction. Since that time, EPA has followed the new air basin boundaries when classifying or designating areas for ozone or $PM_{2.5}$, with the exception of the aforementioned Indian Wells Valley. However, there is one part of the EKCAPCD, which retains a designation from prior to the 1995 boundary change. The PM_{10} Serious Nonattainment Area for the San Joaquin Valley, which was designated moderate in 1991 and reclassified to serious in 1993, still includes the Kern River Valley and western half of the Tehachapi Region (Stallion Springs, Cummings Valley and Bear Valley).

The following SIPs have been prepared to address 8-hour ozone in the MDB and PM_{10} in the Indian Wells Valley:

- EPA published a Notice of Adequacy for the 8-hour ozone Early Progress Plans for Eastern Kern County on November 25, 2008 (effective December 10, 2008); and
- The PM_{10} Attainment demonstration, Maintenance Plan, and Redesignation.

The request was approved by EPA on May 7, 2003 (effective June 6, 2003). While there is a 2007 PM_{10} Maintenance Plan for the San Joaquin Valley, it does not address the portion of the nonattainment area under the jurisdiction of EKCAPCD (East Kern PM_{10} Area). It is important to note that EPA has not designated any area beyond the San Joaquin Valley portion of Kern County as nonattainment for the 1997 $PM_{2.5}$ standards or the 2006 24-hour $PM_{2.5}$ standard.

Local Controls

- Local Control Mechanisms

  - *General Plans:* The most comprehensive land use planning for the Kern region is provided by city and county general plans, which local governments are required by state law to prepare as a guide for future development. The general plan contains goals and policies concerning topics that are mandated by state law and others, which the jurisdiction may have chosen to include. Required topics are land use, circulation, housing, conservation, open space, noise, and safety. Local governments frequently choose to address other topics, including public facilities, parks and recreation, community design, and growth management, among others. City and county general plans must be consistent with each other and County general plans must cover areas not included by city general plans (e.g., unincorporated areas).

  - *Specific and Master Plans:* Specific or Master Plans are sometimes developed by a city or county to address smaller, more specific areas within its jurisdiction. These more localized plans provide for focused guidance for developing a specific area and contain development standards tailored to the area, as well as systematic implementation of the general plan.

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

- *Transportation Control Measures*: Until the passage of the CCAA, the primary role of air districts in California was the control of stationary sources of pollution such as industrial processes and equipment. With the passage of the FCAA and CCAA, air districts were required to implement transportation control measures (TCMs) and were encouraged to adopt indirect source control programs to reduce mobile source emissions. These mandates created the necessity for the Districts to work closely with cities and counties and with regional transportation planning agencies (RTPAs) to develop new programs.

  A description of the various TCMs that have been incorporated into the Air Districts' AQAP, ROP Plans, and the SJVAPCD TCM Program, or have been identified as necessary to provide for positive air quality conformity findings, is included in the latest Air Quality Conformity Findings for the 2011 RTP and other plans and programs. The Findings can be found on the Kern COG web site at http://www.kerncog.org/cms/transportation/aq-conformity. The Conformity Findings include a complete description of each TCM contained in the current SIP, the SJVAPCD AQAP, the TCM Program, and in the ROP Plans. TCMs listed in the FTIP can be found on the Kern COG website at: http://www.kerncog.org.

  A complete description of the current air quality requirements is provided in the 2011 RTP and in RTP Amendment No.1, and the latest Air Quality Conformity Findings are included on the Kern COG website at: http://www.kerncog.org.

  TCMs falls under the umbrella of Transportation Demand Management (TDM), which is the application of strategies and policies to reduce travel demand of single-occupancy, fossil-fueled private vehicles or redistribute the demand in space or in time. TDM emphasizes the movement of people and goods, rather than the movement of motor vehicles. TDM gives priority to more efficient methods of travel such as walking, bicycling, ridesharing, public transportation and telecommuting especially under congested conditions. TDM prioritizes travel based on the value and costs of each trip, giving higher value trips and lower cost modes priority over lover value, higher cost travel thereby increasing overall system efficiency. Managing transportation demand can be a cost-effective alternative to increasing capacity. A demand management approach to transportation can also deliver better environmental outcomes, improve public health, and create stronger communities, which are more prosperous and livable. TDM supports community movements for sustainable transportation.

  There are many different TDM strategies with a variety of impacts. Some improve the transportation options available to consumers. Some provide incentives to change trip scheduling, route, mode or destination. Others reduce the need for physical travel through more efficient land use or transportation substitutes. Although most individual TDM strategies only affect a small portion of total travel, the cumulative impacts of a comprehensive TDM program can be significant. When all benefits and costs are considered, TDM programs are often the most cost effective way to improve transportation. The value of TDM is further enhanced by the following trends:

  - *Rising facility costs.* The costs of expanding highways and parking facilities are increasing. In many cases it is more cost effective to manage demand than to continue to expand supply;

- *Increased urbanization.* In most developed countries the majority of people and jobs are located in urban areas, where traffic and parking problems are significant and alternative modes are cost effective;
- *Demographics.* The population is aging, increasing the importance of providing quality travel options for non-drivers;
- *Energy Costs.* Vehicle fuel costs are projected to increase in the future due to depletion of oil supplies and environmental constraints;
- *Consumer preferences and market trends.* Many consumers want to live in more multi-modal communities where it is possible to walk and bicycle safely, use neighborhood services, and have access to quality public transportation; and
- *Environmental concerns.* Concerns over air pollution, sprawl and other environmental impacts are motivating policy changes to encourage more efficient transportation.

When all impacts are considered, TDM is often the most cost effective solution to transportation problems. TDM can provide multiple benefits, including reduced congestion, road and parking facility cost savings, crash cost savings, consumer cost savings, pollution reduction, and more efficient land use. TDM greatly expands the range of solutions that can be considered for addressing transportation problems, and allows solutions to be tailored to a particular situation. TDM can often be implemented quickly, and target a particular location, time period or user group.

TDM helps correct current transportation and land use market distortions by increasing consumer choice, encouraging competition, making prices more accurately reflect costs, and creating more neutral planning and tax policies. In this way, TCM can support economic development by increasing productivity, reducing external costs and shifting consumer expenditures toward goods that provide greater employment and business activity.

The following TDM strategies will be considered for implementation:

- Employer-Based Commute Trip Reduction:
  - Encourage telecommuting and alternative work schedules;
  - Implement and coordinate use of employee vehicle sharing programs and alternative modes; and
  - Improve employer parking management (e.g. employee parking “cash out”, unbundling parking cost from property cost.

- Fuel Tax:
  - Fuel tax/carbon price.

- Other Trip Reduction (Commute and Other):
  - Implement vehicle sharing programs (e.g. car sharing, bike sharing, park and ride lots).

- Parking Management:
  - Implement effective pricing; and
  - Implement metered pricing.

- Road User Pricing:
  - Implement distance-based (VMT) pricing.
- Transit Service:
  - Adopt competitive fare structure.

➢ *Transportation System Management (TSM)* – Transportation Systems Management (TSM) is a set of strategies aimed at improving the overall performance of the transportation network without resorting to large-scale, expensive capital improvements. TSM integrates techniques from across disciplines to increase safety, efficiency and capacity for all modes in the transportation system. Activities that increase the efficiency of the existing transportation system without adding new travel lanes, thus reducing the amount of energy required to make the system function, such as traffic signalization, ramp metering, truck auxiliary lanes on major inclines, intersection turning lanes, railroad grade separations, and replacing four-way stop signs with traffic signals.

The TSM approach to congestion mitigation seeks to identify improvements to enhance the capacity of the existing system of an operational nature. Through better management and operation of existing transportation facilities, these techniques are designed to improve traffic flow, air quality, and movement of vehicles and goods, as well as enhance system accessibility and safety.

TSM strategies are low-cost but effective in nature, which include, but are not limited to:

- Intersection and signal improvements;
- Freeway bottleneck removal programs;
- Data collection to monitor system performance;
- Special events management strategies;
- Traffic signal and intersection improvements include such elements as:
  - Signal timing optimization;
  - Controller/cabinet and signal head upgrades;
  - Vehicle detectors repair/replacement; and
  - Communication with a central system;
- Turning lanes;
- Grade separations;
- Pavement striping;
- Lane assignment changes;
- Signage and lighting; and
- Freeway and arterial bottleneck removal consists of identifying congested locations and improving such elements as:
  - Insufficient acceleration/deceleration lanes and ramps;
  - Weaving sections;
  - Sharp horizontal/vertical curves;
  - Narrow lanes and shoulders;
  - Inadequate signage and pavement striping; and
  - Other geometric deficiencies.

The identification and elimination of traffic bottlenecks can greatly improve traveling conditions and enhance system capacity, reliability, and safety, especially during peak periods. TSM projects can complement the major capacity improvements and infrastructure by providing improved traffic flow on arterials and local streets.

The following TDM strategies will be considered for implementation:

- Interconnectivity Among Alternative Modes:
  - Improve linkages between modes of travel; and
  - Use Intelligent Transportation System (ITS) technologies (e.g. "smart card").

- Parking Management:
  - Alter parking requirements and types of supply (e.g. maximum parking, shared parking); and
  - Improve efficiency through information (e.g. signs).

- Road User Pricing:
  - Implement congestion pricing;
  - Implement High Occupancy Toll (HOT) Lanes; and
  - Implement area or cordon pricing.

- Service:
  - Implement congestion management strategies (e.g. congestion pricing); and
  - Use other transportation system management strategies.

- Transit Service:
  - Reduce passenger travel time (e.g. fewer stops, express service, traffic signal priority, etc.).

TDM and TSM strategies also benefit mobility and congestion relief by reducing demand and maintaining system efficiency, thereby delaying the need for capacity increasing highway projects.

➢ *Awareness and Incentives to assist with TDM and TSM implementation:*

- Public Participation in Planning:
  - Implement public process for discussion of planning decisions (e.g. forums); and
  - Ensure transparency in decision making and planning process.

- Awareness Programs:
  - Introduce awareness programs on the benefits of land use, transportation and pricing policies.

- Incentives:
  - Provide financial incentives (e.g. grants, tax credits);

- Provide regulatory relief (e.g. density bonuses, expedited processing); and
- Provide recognition programs.

The County of Kern and its eleven (11) incorporated cities, private business, and government offices already implement some of these TDM and TSM strategies and programs including traffic flow improvements, public transit, park and ride lots, bicycling programs, and alternate work schedules.

Environmental Setting, Impacts, Mitigation Measures, and Significant Effects

This section describes existing air quality within the SJVAB and in Eastern Kern County, including the identification of air pollutant standards, meteorological and topological conditions affecting air quality, and current air quality conditions. Air quality is described in relation to ambient air quality standards for criteria pollutants such as, ozone, carbon monoxide, and particulate matter less than 10 microns in size (PM_{10}). A complete description of the current air quality requirements is provided in the latest Air Quality Conformity Findings.

Each of these Conformity documents is incorporated in this SEIR Addendum by reference. The Conformity Findings provide a review of the current status of air quality planning and implementation, including the status of the current SIP, Rate of Progress (ROP) Plans, and the implementation of various TCMs that are committed to in the current SIP and are needed to "offset" nonattainment emission increases associated with the Project.

Geographical Location

Encompassing 24,840 square miles, the San Joaquin Valley is the second largest air basin in California. Cumulatively, counties within the Air Basin represent approximately 16 percent of the state's geographic area. The SJVAB is bordered by the Sierra Nevada Mountains on the east (8,000 to 14,492 feet in elevation), the Coastal Range on the west (4,500 feet in elevation), and the Tehachapi Mountains on the south (9,000 feet elevation). The San Joaquin Valley is open to the north extending to the Sacramento Valley Air Basin. Kern County also includes a portion of the MDB, which is managed by the EKCAPCD. Both air basins within Kern County are shown in Figure 5.

Topographic Conditions

Kern County is located within the SJVAB and in the MDB [as determined by CARB]. Air basins are geographic areas sharing a common "air shed." A description of the Air Basins in the County, as designated by CARB, is provided below. Air pollution is directly related to the region's topographic features, which impact air movement within the Basin.

Wind patterns within the Districts result from marine air that generally flows into the Basin from the San Joaquin River Delta. The Coastal Range hinders wind access into the Valley from the west, the Tehachapi's prevent southerly passage of airflow, and the high Sierra Nevada Mountain Range provides a significant barrier to the east. These topographic features result in weak airflow that becomes restricted vertically by high barometric pressure over the Valley. As a result, the air basins are highly susceptible to pollutant accumulation over time. Most of the surrounding mountains are above the normal height of summer inversion layers (1,500-3,000 feet).

Climatic Conditions

In addition to topographic conditions, the local climate can also contribute to air quality problems. Light winds and atmospheric stability provide frequent opportunities for pollutants to accumulate in the atmosphere. Wind speed and direction also play an important role in the dispersion and transport of air pollutants. Wind at the surface and aloft can disperse pollution by mixing vertically and by transporting it to other locations.

Ozone is classified as a "regional" pollutant due in part to the time required for ozone formation. Ozone, however, is not a directly emitted pollutant. Ozone is formed when its precursors, nitrogen oxides (NO_X) and volatile organic compounds (VOC), react in the presence of sunlight. Ozone precursors can be easily transported by winds from a source area before ozone concentrations peak. In addition, temperature and solar radiation are important factors in the chemistry of ozone formation because ozone is formed in a photochemical reaction requiring sunlight. Generally, higher temperatures create greater amounts of ozone, since reaction rates increase with temperature. However, extremely hot temperatures can lift or break the inversion layer.

Localized pollutants, carbon monoxide (CO) for example, may form high concentrations when wind speed is low. Temperature inversions can also be caused by surface radiant cooling. On clear winter nights, the ground loses heat at a rapid rate, causing air in contact with it to cool. Once formed, radiation inversions are similar to subsidence inversions with respect to their effects on pollutant dilution. A description of specific climatic factors in the Air Basins is provided below.

Climate in the San Joaquin Valley is Mediterranean with moist cool winters and dry warm summers. Precipitation is confined primarily to the winter months. The Kern County portion of the SJVAB had an average annual rainfall over a 30-year period of approximately 6 inches on the Valley floor. During summer months, wind speed and direction data indicate that winds usually originate at the north end of the Valley and flow in a southerly direction through the Tehachapi Pass into the MDB. These prevailing winds, known as "up-valley winds", originate with coastal breezes that enter the San Joaquin Valley through breaks in the coastal ranges, particularly though the Carquinez Straits in the San Francisco Bay Area and the Sacramento Valley Area; however, sources of air pollution, including stationary, mobile and area sources within the central and southern portions of the San Joaquin Valley, are considered to be a greater influence under most conditions. Peak ozone levels tend to be higher in the southernmost portion of the San Joaquin Valley, as the prevailing summer winds sweep precursors downwind of northern source areas.

During winter months, wind speed and direction data indicate that wind occasionally originates from the south end of the Valley and flows in a northerly direction. Also during the winter, the San Joaquin Valley experiences light variable winds, less than ten miles per hour (mph). Low wind speeds, combined with low inversion layers during the winter, create a climate conducive to high CO concentrations.

Wind speed and direction also change throughout the day. During the day, northerly winds prevail. However, in the late evening through the early morning, wind flow reverses direction due to the effects of cooler drainage wind from surrounding mountains. The interruption of northerly wind, including the evening and morning transition between the two wind flow patterns, is known as an "eddy". This adds to the complexity of regional wind flow and pollutant transport within the SJVAB.

Other Air Quality Determinants

In addition to climatic conditions (wind, lack of rain, etc.), air pollution can be caused by human/socioeconomic conditions. Air pollution in the SJVAB can be directly attributed to human activities, which cause air pollutant emissions. Human causes of air pollution in the Valley consist of population growth, urbanization (gas-fired appliances, residential wood heaters, etc.), mobile sources (i.e., cars, trucks, airplanes, trains, etc.), oil production, and agriculture. These are called anthropogenic, or human-caused, sources of emissions. The most significant factors, which are accelerating the decline of air quality in the SJVAB, are the Valley's rapid population growth and its associated increases in traffic, urbanization, and industrial activity.

Carbon monoxide emissions overwhelmingly come from mobile sources in the San Joaquin Valley; on-road vehicles contribute 65 percent, while other mobile vehicles, such as trains, planes, and off-road vehicles, contribute another 17 percent. The Districts are the agencies empowered to regulate air pollutant emissions. The Districts regulate air quality through its permit authority for most types of stationary emission sources and through its planning and review activities for other sources.

Motor vehicles account for significant portions of regional gaseous and particulate emissions. Local large employers such as industrial plants can also generate substantial regional gaseous and particulate emissions. In addition, construction and agricultural activities can generate significant temporary gaseous and particulate emissions (dust, ash, smoke, etc.).

Ozone is the result of a photochemical reaction between Oxides of nitrogen (NO_x) and Reactive Organic Gases (ROG). Mobile sources contribute 64 percent of all NO_x emitted from anthropogenic sources. In addition, mobile sources contribute 53 percent of all the ROG emitted from sources within the San Joaquin Valley.

The principal factors that affect air quality in and around Kern County are:

- The sink effect, climatic subsidence and temperature inversions and low wind speeds;
- Automobile and truck travel; and
- Increases in mobile and stationary pollutants generated by local urban growth.

Automobiles, trucks, buses and other vehicles using hydrocarbon fuels release exhaust products into the air. Each vehicle by itself does not release large quantities; however, when considered as a group, the cumulative effect is significant.

Other sources may not seem to fit into any one of the major categories or they may seem to fit in a number of them. These could include agricultural uses, dirt roads, animal shelters; animal feed lots, chemical plants and industrial waste disposal, which may be a source of dust, odors, or other pollutants. For Kern County, this category includes several agriculturally related activities, such as plowing, harvesting, dusting with herbicides and pesticides and other related activities. Finally, industrial contaminants and their potential to produce various effects depend on the size and type of industry, pollution controls, local topography, and meteorological conditions. Major sources of industrial emissions in Kern County consist of oil and agricultural production and processing operations, wine production, and marketing operations.

Primary PM sources are derived from both human and natural activities. A significant portion of PM sources is generated from a variety of human (anthropogenic) activity. These types of activities include agricultural operations, industrial processes, combustion of wood and fossil fuels, construction and demolition activities, and entrainment of road dust into the air. Natural (nonanthropogenic or biogenic) sources also contribute to the overall PM problem. These include windblown dust and wildfires. Secondary PM sources directly emit air contaminants into the atmosphere that form or help form PM. Hence, these pollutants are considered precursors to PM formation. These secondary pollutants include SOx, NOx, VOCs, and ammonia.

The primary contributors of PM_{10} emissions in the San Joaquin Valley are fugitive windblown dust from "open" fields (38%) and road dust, both paved and unpaved (38%). Farming activities only contribute 14 percent of the PM_{10}.

Air Quality Standards

The federal CAA, first adopted in 1963, and periodically amended since then, established the NAAQS. A set of 1977 amendments determined a deadline for the attainment of these standards. That deadline has since passed. Other CAA amendments, passed in 1990, share responsibility with the State in reducing emissions from mobile sources.

In 1988, the State of California passed the CCAA, State 1988 Statutes, Chapter 1568], which set forth a program for achieving more stringent California Ambient Air Quality Standards. CARB implements state ambient air quality standards, as required in the CCAA, and cooperates with the federal government in implementing pertinent sections of the CAA Amendments (FCAAA). Further, CARB regulates vehicular emissions throughout the State. The SJVAPCD regulates stationary sources, as well as some mobile sources. Attainment of the more stringent State PM_{10} Air Quality Standards is not currently required.

EPA uses six "criteria pollutants" as indicators of air quality, and has established for each of them a maximum concentration above which adverse effects on human health may occur.

Both National and California Ambient Air Quality Standards have been established for the following five critical pollutants: nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulates (PM_{10}), carbon monoxide (CO), and ozone (O_3). Ozone pollution is the most conspicuous type of air pollution, and is often characterized by visibility-reducing haze, eye irritation, and high oxidant concentrations (i.e., "smog").

The Districts operate regional air quality monitoring networks that provide information on average concentrations of pollutants for which state or federal agencies have established ambient air quality standards. Descriptions of the six pollutants of importance in Kern County follow.

- Ozone (1-hour and 8-hour)

  The most severe air quality problem in the SJVAB is the high level of ozone. Ozone occurs in two layers of the atmosphere. The layer surrounding the earth's surface is the troposphere. Here, ground level, or "bad" ozone, is an air pollutant that damages human health, vegetation, and many common materials. It is a key ingredient of urban smog. The troposphere extends to a level about 10 miles up, where it meets the second

layer, the stratosphere. The stratospheric, or "good" ozone layer, extends upward from about 10 to 30 miles and protects life on earth from the sun's harmful ultraviolet rays.

"Bad" ozone is what is known as a photochemical pollutant. It needs reactive organic gases (ROG), NO_x, and sunlight. ROG and NO_x are emitted from various sources throughout Kern County. In order to reduce ozone concentrations, it is necessary to control the emissions of these ozone precursors.

Significant ozone formation generally requires an adequate amount of precursors in the atmosphere and several hours in a stable atmosphere with strong sunlight. High ozone concentrations can form over large regions when emissions from motor vehicles and stationary sources are carried hundreds of miles from their origins.

Ozone is a regional air pollutant. It is generated over a large area and is transported and spread by wind. Ozone, the primary constituent of smog, is the most complex, difficult to control, and pervasive of the criteria pollutants. Unlike other pollutants, ozone is not emitted directly into the air by specific sources. Ozone is created by sunlight acting on other air pollutants (called precursors), specifically NO_x and ROG. Sources of precursor gases to the photochemical reaction that form ozone number in the thousands. Common sources include consumer products, gasoline vapors, chemical solvents, and combustion products of various fuels. Originating from gas stations, motor vehicles, large industrial facilities, and small businesses such as bakeries and dry cleaners, the ozone-forming chemical reactions often take place in another location, catalyzed by sunlight and heat. High ozone concentrations can form over large regions when emissions from motor vehicles and stationary sources are carried hundreds of miles from their origins. Approximately 50 million people lived in counties with air quality levels above the EPA's health-based national air quality standard in 1994. The highest levels of ozone were recorded in Los Angeles, closely followed by the San Joaquin Valley. High levels also persist in other heavily populated areas, including the Texas Gulf Coast and much of the Northeast.

While the ozone in the upper atmosphere absorbs harmful ultraviolet light, ground-level ozone is damaging to the tissues of plants, animals, and humans, as well as to a wide variety of inanimate materials such as plastics, metals, fabrics, rubber, and paints. Societal costs from ozone damage include increased medical costs, the loss of human and animal life, accelerated replacement of industrial equipment, and reduced crop yields.

Health Effects

While ozone in the upper atmosphere protects the earth from harmful ultraviolet radiation, high concentrations of ground-level ozone can adversely affect the human respiratory system. Many respiratory ailments, as well as cardiovascular disease, are aggravated by exposure to high ozone levels. Ozone also damages natural ecosystems, such as: forests and foothill communities; agricultural crops; and some man-made materials, such as rubber, paint, and plastic.

High levels of ozone may negatively affect immune systems, making people more susceptible to respiratory illnesses, including bronchitis and pneumonia. Ozone accelerates aging and exacerbates pre-existing asthma and bronchitis and, in cases with high concentrations, can lead to the development of asthma in active children. Active people, both children and adults, appear to be more at risk from ozone exposure than those with a low level of activity. Additionally, the elderly and those with respiratory disease are also considered sensitive populations for ozone.

People who work or play outdoors are at a greater risk for harmful health effects from ozone. Children and adolescents are also at greater risk because they are more likely than adults to spend time engaged in vigorous activities. Research indicates that children under 12 years of age spend nearly twice as much time outdoors daily than adults. Teenagers spend at least twice as much time as adults in active sports and outdoor activities. In addition, children inhale more air per pound of body weight than adults, and they breathe more rapidly than adults. Children are less likely than adults to notice their own symptoms and avoid harmful exposures.

Ozone is a powerful oxidant—it can be compared to household bleach, which can kill living cells (such as germs or human skin cells) upon contact. Ozone can damage the respiratory tract, causing inflammation and irritation, and it can induce symptoms such as coughing, chest tightness, shortness of breath, and worsening of asthmatic symptoms.

Ozone in sufficient doses increases the permeability of lung cells, rendering them more susceptible to toxins and microorganisms. Exposure to levels of ozone above the current ambient air quality standard leads to lung inflammation and lung tissue damage and a reduction in the amount of air inhaled into the lungs.

The federal and state standards for Ozone are not being met in the SJVAB, MDB, or in the EKCAPCD.

- Particulate Matter

Particulate matter (PM) pollution consists of very small liquid and solid particles that remain suspended in the air for long periods. Some particles are large or concentrated enough to be seen as soot or smoke. Others are so small they can be detected only with an electron microscope. Particulate matter is a mixture of materials that can include smoke, soot, dust, salt, acids, and metals. Particulate matter is emitted from stationary and mobile sources, including diesel trucks and other motor vehicles; power plants; industrial processes; wood-burning stoves and fireplaces; wildfires; dust from roads, construction, landfills, and agriculture; and fugitive windblown dust. PM_{10} refers to particles less than or equal to 10 microns in aerodynamic diameter.

$PM_{2.5}$ refers to particles less than or equal to 2.5 microns in aerodynamic diameter and are a subset of PM_{10}. Particulates of concern are those that are 10 microns or less in diameter. These are small enough to be inhaled, pass through the respiratory system and lodge in the lungs, possibly leading to adverse health effects.

In the western United States, there are sources of PM_{10} in both urban and rural areas. Because particles originate from a variety of sources, their chemical and physical compositions vary widely. The composition of

PM_{10} and $PM_{2.5}$ can also vary greatly with time, location, the sources of the material and meteorological conditions. Dust, sand, salt spray, metallic and mineral particles, pollen, smoke, mist, and acid fumes are the main components of PM_{10} and $PM_{2.5}$. In addition to those listed previously, secondary particles can also be formed as precipitates from chemical and photochemical reactions of gaseous sulfur dioxide (SO_2) and NO_x in the atmosphere to create sulfates (SO_4) and nitrates NO_3. Secondary particles are of greatest concern during the winter months where low inversion layers tend to trap the precursors of secondary particulates.

The CARB 2008 $PM_{2.5}$ Plan builds upon the aggressive emission reduction strategy adopted in the 2007 Ozone Plan and strives to bring the Valley into attainment status for the 1997 NAAQS for $PM_{2.5}$. The 2008 $PM_{2.5}$ Plan indicates that all planned reductions (from the 2007 Ozone Plan and state controls) plus significant reductions from new measures will be needed to attain the annual standard.

The following new controls considered in the 2008 $PM_{2.5}$ Plan include:

- Tighter restrictions on residential wood burning and space heating;
- More stringent limits on $PM_{2.5}$, SO_2, and NO_x emissions from industrial sources;
- Measures to reduce emissions from prescribed burning and agricultural burning; and
- More effective work practices to control $PM_{2.5}$ in fugitive dust.

The control strategy in this plan would also bring the valley closer to attainment status for the 2006 daily $PM_{2.5}$ standard. The District presented the draft 2008 $PM_{2.5}$ Plan to the District Governing Board on April 17, 2008, following a 30-day public comment period. This plan was delivered to the EPA in April 2008.

Health Effects

PM_{10} and $PM_{2.5}$ particles are small enough—about one-seventh the thickness of a human hair, or smaller—to be inhaled and lodged in the deepest parts of the lung where they evade the respiratory system's natural defenses. Health problems begin as the body reacts to these foreign particles. Acute and chronic health effects associated with high particulate levels include the aggravation of chronic respiratory diseases, heart and lung disease, and coughing, bronchitis, and respiratory illnesses in children. Recent mortality studies have shown a statistically significant direct association between mortality and daily concentrations of particulate matter in the air. Non-health-related effects include reduced visibility and soiling of buildings. PM_{10} can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. PM_{10} and $PM_{2.5}$ can aggravate respiratory disease and cause lung damage, cancer, and premature death.

Although PM can cause health problems for everyone, certain people are especially vulnerable to adverse health effects of PM_{10}. These "sensitive populations" include children, the elderly, exercising adults, and those suffering from chronic lung disease such as asthma or bronchitis. Of greatest concern are recent studies that link PM_{10} exposure to the premature death of people who already have heart and lung disease, especially the elderly. Acidic PM_{10} can also damage manmade materials and is a major cause of reduced visibility in many parts of the United States.

The federal standards for PM_{10} are being met in the SJVAB, MDAB, and in the EKCAPCD but are not being met for state standards. The federal standards for $PM_{2.5}$ are being met in the EKCAPCD, and the federal and state standards for $PM_{2.5}$ are not being met in the SJVAB or in the MDAB.

- Carbon Monoxide (CO)

Carbon monoxide (CO) is emitted by mobile and stationary sources as a result of incomplete combustion of hydrocarbons or other carbon-based fuels. CO is an odorless, colorless, poisonous gas that is highly reactive. CO is a byproduct of motor vehicle exhaust, contributes more than two-thirds of all CO emissions nationwide. In cities, automobile exhaust can cause as much as 95 percent of all CO emissions. These emissions can result in high concentrations of CO, particularly in local areas with heavy traffic congestion. Other sources of CO emissions include industrial processes and fuel combustion in sources such as boilers and incinerators. Despite an overall downward trend in concentrations and emissions of CO, some metropolitan areas still experience high levels of CO.

Health Effects

CO enters the bloodstream and binds more readily to hemoglobin than oxygen, reducing the oxygen-carrying capacity of blood and thus reducing oxygen delivery to organs and tissues. The health threat from CO is most serious for those who suffer from cardiovascular disease. Healthy individuals are also affected but only at higher levels of exposure. At high concentrations, CO can cause heart difficulties in people with chronic diseases and can impair mental abilities. Exposure to elevated CO levels is associated with visual impairment, reduced work capacity, reduced manual dexterity, poor learning ability, difficulty performing complex tasks, and in prolonged, enclosed exposure, death.

The adverse health effects associated with exposure to ambient and indoor concentrations of CO are related to the concentration of carboxyhemoglobin (COHb) in the blood. Health effects observed may include an early onset of cardiovascular disease; behavioral impairment; decreased exercise performance of young, healthy men; reduced birth weight; sudden infant death syndrome (SIDS); and increased daily mortality rate.

Most of the studies evaluating adverse health effects of CO on the central nervous system examine high-level poisoning. Such poisoning results in symptoms ranging from common flu and cold symptoms (shortness of breath on mild exertion, mild headaches, and nausea) to unconsciousness and death.

The federal standards for Carbon Monoxide are being met in the SJVAB, MDB, and in the EKCAPCD.

- Nitrogen Oxides (NO_x)

Nitrogen oxides (NO_x) is a family of highly reactive gases that are primary precursors to the formation of ground-level ozone and react in the atmosphere to form acid rain. NO_x is emitted from combustion processes in which fuel is burned at high temperatures, principally from motor vehicle exhaust and stationary sources such as electric utilities and industrial boilers. A brownish gas, NO_x is a strong oxidizing agent that reacts in the air to form corrosive nitric acid, as well as toxic organic nitrates.

Health Effects

NO_x is an ozone precursor that combines with ROG to form ozone. See the ozone section above for a discussion of the health effects of ozone.

Direct inhalation of NO_x can also cause a wide range of health effects. NO_x can irritate the lungs, cause lung damage, and lower resistance to respiratory infections such as influenza. Short-term exposures (e.g., less than 3 hours) to low levels of nitrogen dioxide (NO_2) may lead to changes in airway responsiveness and lung function in individuals with preexisting respiratory illnesses. These exposures may also increase respiratory illnesses in children. Long-term exposures to NO_2 may lead to increased susceptibility to respiratory infection and may cause irreversible alterations in lung structure. Other health effects associated with NO_x are an increase in the incidence of chronic bronchitis and lung irritation. Chronic exposure to NO_2 may lead to eye and mucus membrane aggravation, along with pulmonary dysfunction. NO_x can cause fading of textile dyes and additives, deterioration of cotton and nylon, and corrosion of metals due to production of particulate nitrates. Airborne NO_x can also impair visibility. NO_x is a major component of acid deposition in California. NO_x may affect both terrestrial and aquatic ecosystems. NO_x in the air is a potentially significant contributor to a number of environmental effects such as acid rain and eutrophication in coastal waters. Eutrophication occurs when a body of water suffers an increase in nutrients that reduce the amount of oxygen in the water, producing an environment that is destructive to fish and other animal life.

NO_2 is toxic to various animals as well as to humans. Its toxicity relates to its ability to combine with water to form nitric acid in the eye, lung, mucus membranes, and skin. Studies of the health impacts of NO_2 include experimental studies on animals, controlled laboratory studies on humans, and observational studies.

In animals, long-term exposure to NO_x increases susceptibility to respiratory infections, lowering their resistance to such diseases as pneumonia and influenza. Laboratory studies show susceptible humans, such as asthmatics, exposed to high concentrations of NO_2, can suffer lung irritation and, potentially, lung damage. Epidemiological studies have also shown associations between NO_2 concentrations and daily mortality from respiratory and cardiovascular causes as well as hospital admissions for respiratory conditions.

NO_x contributes to a wide range of environmental effects both directly and when combined with other precursors in acid rain and ozone. Increased nitrogen inputs to terrestrial and wetland systems can lead to changes in plant species composition and diversity. Similarly, direct nitrogen inputs to aquatic ecosystems such as those found in estuarine and coastal waters can lead to eutrophication as discussed above. Nitrogen, alone or in acid rain, also can acidify soils and surface waters. Acidification of soils causes the loss of essential plant nutrients and increased levels of soluble aluminum, which is toxic to plants. Acidification of surface waters creates conditions of low pH and levels of aluminum that are toxic to fish and other aquatic organisms.

The federal and state standards for Nitrogen Dioxide are being met in the SJVAB, MDB, and in the EKCAPCD.

- Sulfur Dioxide (SO_2)

  The major source of sulfur dioxide (SO_2) is the combustion of high-sulfur fuels for electricity generation, petroleum refining and shipping. High concentrations of SO_2 can result in temporary breathing impairment for asthmatic children and adults who are active outdoors. Short-term exposures of asthmatic individuals to elevated SO_2 levels during moderate activity may result in breathing difficulties that can be accompanied by symptoms such as wheezing, chest tightness, or shortness of breath. Other effects that have been associated with longer-term exposures to high concentrations of SO_2, in conjunction with high levels of PM, include aggravation of existing cardiovascular disease, respiratory illness, and alterations in the lungs' defenses. SO_2 also is a major precursor to $PM_{2.5}$, which is a significant health concern and a main contributor to poor visibility. In humid atmospheres, sulfur oxides can react with vapor to produce sulfuric acid, a component of acid rain.

  The standards for SO_2 are being met in the MDB and the EKCAPCD does not expect that the standards will be exceeded in the near future.

- Lead (Pb)

  Lead, a naturally occurring metal, can be a constituent of air, water, and the biosphere. Lead is neither created nor destroyed in the environment, so it essentially persists forever. Lead was used until recently to increase the octane rating in automobile fuel. Since the 1980s, lead has been phased out in gasoline, reduced in drinking water, reduced in industrial air pollution, and banned or limited in consumer products. Gasoline-powered automobile engines were a major source of airborne lead through the use of leaded fuels; however, the use of leaded fuel has been mostly phased out. Since this has occurred the ambient concentrations of lead have dropped dramatically.

  Exposure to lead occurs mainly through inhalation of air and ingestion of lead in food, water, soil, or dust. It accumulates in the blood, bones, and soft tissues and can adversely affect the kidneys, liver, nervous system, and other organs. Excessive exposure to lead may cause neurological impairments such as seizures, mental retardation, and behavioral disorders. Even at low doses, lead exposure is associated with damage to the nervous systems of fetuses and young children. Effects on the nervous systems of children are one of the primary health risk concerns from lead. In high concentrations, children can even suffer irreversible brain damage and death. Children 6 years old and under are most at risk, because their bodies are growing quickly.

  The state standards for lead are being met in the SJVAB, MDB, and within the EKCAPCD boundaries.

Toxic Air Contaminants (TACs)

In addition to the criteria pollutants discussed above, Toxic Air Contaminants (TACs) are another group of pollutants of concern. TACs are injurious in small quantities and are regulated despite the absence of criteria documents. The identification, regulation and monitoring of TACs is relatively recent compared to that for criteria pollutants. Unlike criteria pollutants, TACs are regulated on the basis of risk rather than specification of safe levels of contamination.

Existing air quality concerns within Kern County and the entire SJVAB and EKCAPCD area are related to increases of regional criteria air pollutants (e.g., ozone and particulate matter), exposure to toxic air contaminants, odors, and increases in greenhouse gas emissions contributing to climate change. The primary source of ozone (smog) pollution is motor vehicles. Particulate matter is caused by dust, primarily dust generated from construction and grading activities, and smoke, which is emitted from fireplaces, wood-burning stoves, and agricultural burning. EKCAPCD has prepared the 2008 Annual AB2588 Air Toxics Report, which outlines an initial inventory of air toxic emissions and assessment of risk in the eastern portion of Kern County.

- Odors

  Typically odors are regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

  With respect to odors, the human nose is the sole sensing device. The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals have the ability to smell minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; in fact, an odor that is offensive to one person (e.g., from a fast-food restaurant) may be perfectly acceptable to another.

  It is also important to note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

  Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word "strong" to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air.

  When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

- Sensitive Receptors

  A sensitive receptor is a location where human populations, especially children, seniors, and sick persons, are present and where there is a reasonable expectation of continuous human exposure to pollutants. Examples of sensitive receptors include residences, hospitals and schools.

Methodology

The impact assessment for air quality focuses on potential effects the 2011 RTP Amendment No. 1 (Project) might have on air quality within the Kern region. The assessment is not site or individual improvement project-specific but is a regional analysis.

Criteria for Significance

CEQA Guidelines establish that a significant impact would be expected to occur if the Project would:

- Conflict with or obstruct with implementation of an applicable air quality plan;
- Violate any air quality standard or contribute to an existing or projected air quality violation;
- Result in cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard;
- Expose sensitive receptors to substantial pollutant concentrations; and
- Create objectionable odors affecting a substantial number of people.

Development of the Project would generate air pollutant emissions from a wide variety of stationary and mobile sources. Stationary source emissions would be generated by transportation facility construction activities. Mobile source emissions would be generated by motor vehicle travel associated with construction activities and use of the improvement projects included in the Project. This section of the Air Quality Impact Assessment addresses and analyzes the regional or area-wide and the localized air quality impacts associated with the Project. A discussion of significance criteria and an assessment of construction emissions are presented below based on the methodologies recommended in the SJVAPCD's *Guide for Assessing and Mitigating Air Quality Impacts*.

Short-Term Construction Impacts

Impact 3.3.1

Construction activities would increase short-term air emissions. This would be considered a less than significant impact.

Short-term impacts result from the following construction-related sources:

- Construction equipment emissions;
- Dust from grading and earthmoving operations; and
- Emissions from workers' vehicles traveling to and from construction sites.

As individual transportation improvements are constructed, the activity at individual construction sites will involve grading and other earth-moving operations and the use of diesel and gasoline-powered construction equipment. These generate exhaust emissions of carbon monoxide and nitrogen dioxide at the individual construction sites.

Where asphalt is used, volatile organic compounds (VOC) will be released from asphalt when it is applied to roadway surfaces. If an individual construction site is located near existing homes or other sensitive receptors, such emissions could have the potential to result in significant short-term impacts at that particular location.

The Districts have developed thresholds of significance for individual construction projects. Individual improvement project-level analysis conducted for CEQA purposes would estimate construction emissions for each individual improvement project based on the equipment used, vehicle miles traveled, and time allowed to complete the project. Mitigation measures to reduce air quality impacts would be established in individual improvement project-specific environmental documents. However, some of the larger projects could have the potential to exceed the significance thresholds established by the Districts, creating significant short-term impacts. These impacts would occur in localized areas depending on the construction site locations.

Since the Project proposes more highway and arterial projects than the No Project Alternative, short-term construction emissions would be greater. However, construction-related impacts are expected to be temporary in nature and can generally be reduced to a less than significant level through the use of mitigation measures and through compliance with applicable existing city, county, State, and District regulations for reducing construction-related emissions. Therefore, the increase in construction activities proposed by the Project is expected to constitute a less than significant impact on a programmatic level. Nonetheless, individual projects may exceed the emissions thresholds, which would constitute a project-level significant impact. Individual projects would be required to implement mitigation measures to reduce construction emissions.

Mitigation Measures

All mitigation measures will be included in project-level analysis, as appropriate. The individual improvement project proponent or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with mitigation measures.

- Implementation agencies will ensure implementation of mitigation measures to reduce PM_{10}, $PM_{2.5}$, and NOx emissions from construction sites, including:

  - Maintain on-site truck loading zones;
  - Configure on-site construction parking to minimize traffic interference and to ensure emergency vehicle access;
  - Provide temporary traffic control during all phases of construction activities to improve traffic flow;
  - Use best efforts to minimize truck idling to not more than two minutes during construction;
  - Apply non-toxic soil stabilizers (according to manufacturers' specifications) to all inactive construction areas;
  - During construction, replace ground cover in disturbed areas as quickly as possible;
  - During construction, enclose, cover, water twice daily or apply non-toxic soil binders (according to manufacturers' specifications) to exposed piles with five percent (5%) or greater silt content and to all unpaved parking or staging areas or unpaved road surfaces;
  - During the period of construction, install wheel washers where vehicles enter and exit unpaved roads onto paved roads, or wash off trucks and any equipment leaving the site each trip;

- During the period of construction, assure that traffic speeds on all unpaved roads be reduced to fifteen (15) mph or less;
- Pave all construction access roads at least 100 feet on to the site from permanent roadways; and
- Cover all haul trucks.

- Implementation agencies will avoid improvement project designs requiring significant amounts of material, such as excavated soil and construction debris, to be transported from the site to disposal facilities. Construction sites will employ a balanced cut/fill ratio to the extent possible, thus reducing haul-truck trip emissions.

Significance After Mitigation

Less than significant consistent with the finding made for the 2011 RTP SEIR.

Impact 3.3.2

Traffic conditions at some individual locations may lead to occasional localized carbon monoxide concentrations.

The proposed Project will improve traffic flows and reduce congestion system-wide, reducing the potential for carbon monoxide "hot spots" that can occur from exhaust of idling cars waiting to clear a heavily congested intersection or crossing. The Project is intended to reduce congested conditions throughout the system that is faced with a challenge to accommodate additional traffic generated by projected population. While the proposed improvements will respond to this challenge by accommodating additional traffic and reducing congestion (brought by that additional traffic) system-wide, exhaust emissions from cars at localized areas may, at certain times, create a potential for carbon monoxide concentrations, or hot spots, to develop under adverse atmospheric conditions that prevent a rapid dispersion of carbon monoxide. Currently, the Air Basins are in attainment of federal and State standards for carbon monoxide, and the carbon monoxide emissions are not a serious problem in the Basins. Nonetheless, because there is a potential for exhaust emissions from cars at localized areas to create an occasional hot spot, the following mitigation measure is proposed.

Mitigation Measure

- At those facilities or intersections near sensitive receptors where carbon monoxide concentrations may exist, the implementing agency will reduce or alleviate these concentrations by improving traffic flows through improved signalization, restriping, addition of traffic lanes, and other improvements identified as part of the environmental review of an individual improvement project.

Significance After Mitigation

The Project will result in beneficial effects of system-wide improvement in traffic flows and reduced congestion, which would reduce the potential for forming carbon monoxide hot spots. At some locations where instances of congested conditions may occur near sensitive receptors, implementation of identified mitigation is anticipated to ensure improved traffic flows such that the potential for creating a hot spot will be reduced to a ***less than significant level*** consistent with the finding made for the 2011 RTP SEIR.

Long-Term Impacts

Impact 3.3.3 – Emission Impacts

The following analysis is a summary of the Conformity Analysis for the 2011 RTP Amendment No.1. The complete Air Quality Conformity Analysis is available on Kern COG's website at: http://www. kerncog.org.

- Federal Air Quality Standards

  CAA Section 176(c) (42 U.S.C. 7506(c)) and EPA transportation conformity regulations (40 CFR 93 Subpart A) require that each new RTP and TIP be demonstrated to conform to the State Implementation Plan (SIP) before the RTP and TIP are approved by the MPO or accepted by the U.S. DOT. The conformity analysis is a federal requirement designed to demonstrate compliance with the national ambient air quality standards. However, because the Kern County SIPs for CO, PM_{10}, $PM_{2.5}$ and/or Ozone address attainment of both the state and federal standards, for these pollutants, demonstrating conformity to the federal standards is also an indication of progress toward attainment of the State standards. Compliance with the State air quality standards is provided on the pages following this federal conformity discussion.

- Conformity Requirements

  The federal transportation conformity regulations (40 Code of Federal Regulations Parts 51 and 93) specify criteria and procedures for conformity determinations for transportation plans, programs, and projects and their respective amendments. The federal transportation conformity regulation was first promulgated in 1993 by the U.S. EPA, following the passage of amendments to the Federal Clean Air Act in 1990. The federal transportation conformity regulation has been revised several times since its initial release to reflect both EPA rule changes and court opinions.

  The conformity regulation applies nationwide to "all nonattainment and maintenance areas for transportation-related criteria pollutants for which the area is designated nonattainment or has a maintenance plan" (40 CFR 93.102). Transportation plans and programs for the nonattainment areas for the Kern County area therefore, must satisfy the requirements of the Federal transportation conformity regulation.

  Under the transportation conformity regulation, the principal criteria for a determination of conformity for transportation plans and programs are:

  - The TIP and RTP must pass an emissions budget test using a budget that has been found to be adequate by EPA for transportation conformity purposes, or an interim emission test;
  - The latest planning assumptions and emission models specified for use in conformity determinations must be employed;
  - The TIP and RTP must provide for the timely implementation of transportation control measures (TCMs) specified in the applicable air quality implementation plans; and
  - Interagency and public consultation.

On-going interagency consultation is conducted through the San Joaquin Valley Interagency Consultation Group to ensure Valley-wide coordination, communication and compliance with FCAA and CCAA requirements. Each of the eight Valley MPOs and the SJVAPCD are represented. The Federal Highway Administration (FHWA), Federal Transit Administration (FTA), the U.S. EPA, CARB and Caltrans are also represented on the committee. The final determination of conformity for the TIP and RTP is the responsibility of FHWA, and FTA within the U.S. DOT.

- Kern County Conformity Tests

The conformity tests specified in the federal transportation conformity regulations are: (1) the emissions budget test, and (2) the interim emission test. For the emissions budget test, predicted emissions for the TIP/RTP must be less than or equal to the motor vehicle emissions budget specified in the approved air quality implementation plan or the emissions budget found to be adequate for transportation conformity purposes. If there is no approved air quality plan for a pollutant for which the region is in nonattainment or no emission budget has been found to be adequate for transportation conformity purposes, the interim emission test applies. The Air Quality Conformity summarizes the applicable air quality implementation plans and conformity tests for ozone, PM_{10}, and $PM_{2.5}$.

Each of the District plans (Ozone Plan, $PM_{2.5}$ Plan, and PM_{10} Maintenance Plan) identifies a "budget" for measuring progress toward achieving attainment of the national air quality standard. A "budget" is, in effect, an emissions "threshold" or "not to exceed value" for specific years in which progress toward attainment of the standard must be measured. These specific years can also be described as “budget years" and are established to ensure achievement of the "budget" to demonstrate continued progress toward attainment of the national air quality standard. The term "base year" also reflects a "threshold" or "not to exceed" value against which future emissions from the 2011 RTP are measured.

The conformity regulation (Section 93.118[b] and [d]) requires documentation of the "budget years" for which consistency with motor vehicle emission "budgets" must be shown. In addition, any interpolation performed to meet tests for "budget years" in which specific analysis is not required need to be documented. For the selection of the analysis years, the conformity regulation requires: (1) that if the attainment year is in the time span of the transportation plan, it must be modeled; (2) the last year forecast in the transportation plan must be an analysis year; and (3) analysis years may not be more than ten years apart. In addition, the conformity regulation requires that conformity must be demonstrated for each "budget year." It is important to note, that although the conformity regulation requires modeling of several analysis years in addition to the “budget years," those additional analysis years must demonstrate that emissions in those years are less than the applicable motor vehicle emissions "budget." Tables 18 and 19 below show the analysis years for both the MDB and the SJVAB.

TABLE 18
Emission Budget Years By Pollutant - SJVAB

Pollutant	Budget Years	Attainment/ Maintenance Year	Intermediate Years	RTP Horizon Year
Ozone	2011/2014/2017	2032[2]	2025	2035
PM_{10}	NA	2020	2025	2035
$PM_{2.5}$	2012	2014	2017 / 2025	2035

[1] Budget years that are not in the time frame of the transportation plan are not included as analysis years (e.g., CO 2003 and 2010, Ozone 2008, PM-10 2005, $PM_{2.5}$ 2009), although they may be used to demonstrate conformity.
[2] The attainment year for Serious 8-hour Ozone areas is 2013; however, the 2007 Ozone Plan requests reclassification to Extreme, which has an attainment year of 2023.
Source: San Joaquin Valley Air Pollution Control District, 2007

TABLE 19
Emission Budget Years By Pollutant - MDB

Pollutant	Budget Years	Attainment/ Maintenance Year	Intermediate Years	RTP Horizon Year
E. Kern Ozone	NA	1	2015 / 2025	2035
Indian Wells Valley PM_{10}	NA	2013[2]	2015 / 2025	2035
East Kern PM_{10}	NA	NA	2015 / 2025	2035

1 Since the attainment year is currently 2008 for ozone and 2010 for PM-10, which are NOT in the time span of the transportation plan, it is not included as an analysis year, although the ozone budget itself will be used to demonstrate conformity.
2 It is anticipated that conformity for the 2013 maintenance year will be demonstrated via interpolation (with 2011 SJV analysis year) as allowed by the rule.

Section 93.118(b)(2) clarifies that when a maintenance plan has been submitted, conformity must be demonstrated for the last year of the maintenance plan and any other years for which the maintenance plan establishes budgets in the time frame of the transportation plan.

Section 93.118(d)(2) indicates that a regional emissions analysis may be performed for any years, the attainment year, and the last year of the plan's forecast. Other years may be determined by interpolating between the years for which the regional emissions analysis is performed.

Section 93.118(d)(2) indicates that the regional emissions analysis may be performed for any years in the time frame of the transportation plan provided they are not more than ten years apart and provided the

analysis is performed for the attainment year (if it is in the time frame of the transportation plan) and the last year of the plan's forecast period. Emissions in years for which consistency with motor vehicle emissions budgets must be demonstrated, as required in paragraph (b) of this section (i.e., each budget year), may be determined by interpolating between the years for which the regional emissions analysis is performed.

- Ozone Precursors

  The regional emissions analysis and forecasts for ozone precursors (ROG and NO_X) are summarized in Tables 20 through 22. The summary of emissions forecasts is derived from outputs of the EMFAC 2007 Version 2.3 model[1] performed by Kern COG staff during the preparation of the Air Quality Conformity. As indicated above, the words "budget" refers to the emissions "threshold" or "not to exceed value" for "budget years" in order demonstrate continued progress toward attainment of the state air quality standard.

- Particulate Matter

  The regional emissions analysis and forecasts for particulate matter (PM_{10} and $PM_{2.5}$) are summarized in Tables 20 through 22. The summary of emissions forecasts is derived from outputs of the EMFAC 2007 Version 2.3 model performed by Kern COG staff during the preparation of the Air Quality Conformity. As indicated above, the words "budget" refers to the emissions "threshold" or "not to exceed value" for "budget years" in order demonstrate continued progress toward attainment of the state air quality standard. The words" base year" in the tables below also reflects a "threshold" or "not to exceed" value against which future emissions from the 2011 RTP Amendment No.1 are measured.

Results of the Conformity Analysis

A regional emissions analysis was conducted for each applicable pollutant. All analyses were conducted using the latest planning assumptions and emissions models. It should be noted that only the interim years analyzed changed as a result of RTP Amendment No.1. The Base and Year 2035 estimates did not change since only project timing was adjusted. The major conclusions of the Kern COG Conformity Analysis are:

- For carbon monoxide, the total regional on-road vehicle-related emissions associated with implementation of the 2011 FTIP and the 2011 RTP Amendment No.1 for the analysis years are projected to be less than the approved motor vehicle emissions budget established in the 2004 Revision to the California SIP for Carbon Monoxide (reference Table 20). The applicable conformity test for carbon monoxide is therefore satisfied.

- For ozone, the total regional on-road vehicle-related emissions (ROG and NO_X) associated with implementation of the 2011 FTIP and the 2011 RTP Amendment No.1 for all years tested are projected

[1] Note that EMFAC 2007 does not include any reductions in criteria pollutants that may be achieved by implementation of the Pavley GHG Emissions Standards. Although the Pavley GHG emissions standards limit only GHGs, it is likely that concomitant reductions in GHGs will occur. However, because there are not regulatory reductions of other criteria pollutants mandated, the reductions cannot be quantitatively assessed.

to be less than the adequate emissions budgets specified in the 2007 Ozone Plan. The conformity tests for ozone are therefore satisfied.

- For PM_{10}, the total regional vehicle-related emissions (PM_{10} and NO_X) associated with implementation of the 2011 FTIP and the 2011 RTP Amendment No.1 for all years tested are either (1) projected to be less than the approved emissions budgets, or (2) less than the emission budgets using the approved PM_{10} and NO_X trading mechanism for transportation conformity purposes from the 2007 PM_{10} Maintenance Plan. The conformity tests for PM_{10} are therefore satisfied.

- For $PM_{2.5}$, the total regional on-road vehicle-related emissions associated with implementation of the 2011 FTIP and the 2011 RTP Amendment No.1 for the analysis years are projected to be less than the adequate emission budgets specified in the 2008 $PM_{2.5}$ Plan. The conformity tests for $PM_{2.5}$ for both the 1997 and 2006 standards are therefore satisfied.

Based on the conformity analysis, the 2011 FTIP and the 2011 RTP Amendment No.1 conform to the applicable State Implementation Plan (SIP) and all applicable sections of the EPA's Transportation Conformity Rule.

- State Air Quality Standards

The SJVAPCD and EKCAPCD are two of 35 air quality management districts that have prepared air quality management plans to accomplish a five percent annual reduction in emissions documenting progress toward achievement of the state ambient air quality standards.

The District air quality management plans document required emissions reductions from all emissions sources, mobile and stationary. For this analysis, only on-road mobile source emissions are considered, as the 2011 RTP Amendment No. 1 does not impact the implementation of any SJVAPCD regulations or incentives on other emissions source categories. As such, this analysis will not show the entire five percent reductions required by each of the District plans (for each applicable pollutant), but, will show the on-road mobile source share of the five percent per year reductions resulting from each of the District Plans. Required reductions from all other emissions sources can be found in the applicable District Plan.

The 2011 RTP Amendment No.1 demonstrates compliance with the list of comprehensive regulatory and incentive based measures contained in each plan by demonstrating that motor vehicle emissions resulting from the 2011 RTP Amendment No.1 are less than specified motor vehicle emissions "budgets" contained in the applicable District plans (2007 Ozone Plan, 2008 $PM_{2.5}$ Plan, and 2007 PM_{10} Maintenance Plan, which relies on the 2003 PM_{10} Plan for emissions reductions measures). To document compliance with the State air quality standards, each of these District plans identifies specific years in which progress toward attainment of the standard must be measured. These years are described as "budget" years because each of these District plans identifies motor vehicle emission "budgets" in which 2011 RTP Amendment No.1 motor vehicle emissions cannot exceed in order to ensure continued progress toward attainment of the State standard. For on-road mobile sources, the District plans identify the same emissions reduction strategies for both State and federal standards.

TABLE 20
Conformity Results for RTP Projects
2011 Conformity Results Summary – Kern

Pollutant	Scenario	Emissions Total	DID YOU PASS?
Carbon Monoxide		CO (tons/day)	CO
	2010 Budget	180	
	2017	69	YES
	2018 Budget	180	
	2018	67	YES
	2025	52	YES
	2035	51	YES

Pollutant	Scenario	ROG (tons/day)	NOx (tons/day)	ROG	NOx
Ozone	2011 Budget	15.7	79.4		
	2011	14.1	72.4	YES	YES
	2014 Budget	13.5	64.1		
	2014	12.0	57.2	YES	YES
	2017 Budget	11.6	49.5		
	2017	10.2	43.5	YES	YES
	2023	8.2	27.7	YES	YES
	2025	7.9	25.4	YES	YES
	2035	7.5	23.3	YES	YES

Pollutant	Scenario	PM-10 (tons/day)	NOx (tons/day)	PM-10	NOx
PM_{10}	Adjusted 2020 Budget	14.7	39.5		
	2020	12.7	34.1	YES	YES
	Adjusted 2020 Budget	14.7	39.5		
	2025	12.9	25.6	YES	YES
	Adjusted 2020 Budget	16.6	36.7		
	2035	16.6	23.4	YES	YES

TABLE 20 (Continued)
Conformity Results for RTP Projects
2011 Conformity Results Summary – Kern

Option 1: Assumes Adequate Conformity Budgets

Pollutant	Scenario	PM2.5 (tons/day)	NOx (tons/day)	PM2.5	NOx
1997 PM2.5 24-Hour & Annual Standards and 2006 24-Hour Standard	2012 Budget	3.0	74.2		
	2012	2.7	67.7	YES	YES
	2014	2.4	57.4	YES	YES
	2017	1.9	43.1	YES	YES
	2025	1.4	24.1	YES	YES
	2035	1.4	21.9	YES	YES

Option 2: Assumes no EPA action on conformity budgets

Pollutant	Scenario	PM2.5 (tons/day)	NOx (tons/day)	PM2.5	NOx
1997 PM2.5 24-Hour Standards	2002 Base Year	3.7	94.1		
	2014	2.4	59.7	YES	YES
	2017	1.9	45.3	YES	YES
	2025	1.4	25.6	YES	YES
	2035	1.4	23.4	YES	YES

Pollutant	Scenario	PM2.5 (tons/year)	NOx (tons/year)	PM2.5	NOx
1997 PM2.5 Annual Standard	2002 Base Year	1351	34347		
	2014	876	21791	YES	YES
	2017	694	16535	YES	YES
	2025	511	9344	YES	YES
	2035	511	8541	YES	YES

Pollutant	Scenario	PM2.5 (tons/day)	NOx (tons/day)	PM2.5	NOx
2006 PM2.5 24-Hour Standards	2008 Base Year	3.6	98.9		
	2014	2.4	59.7	YES	YES
	2017	1.9	45.3	YES	YES
	2025	1.4	25.6	YES	YES
	2035	1.4	23.4	YES	YES

TABLE 21
Conformity Results for RTP Projects
2011 Conformity Results Summary – Kern Indian Wells Valley

Pollutant	Scenario	Emissions Total	DID YOU PASS?
		PM-10 (tons/day)	PM-10
	2001 Budget	1.6	
	2011	1.2	YES
PM-10	2013 Budget	1.7	
	2013	1.0	YES
	2015	0.9	YES
	2025	1.1	YES
	2035	1.3	YES

TABLE 22
Conformity Results for RTP Projects
2011 Conformity Results Summary – Kern Mojave Desert

Pollutant	Scenario	Emissions Total		DID YOU PASS?	
		ROG (tons/day)	NOx (tons/day)	ROG	NOx
	2008 Budget	5	18		
	2011	3	13	YES	YES
Ozone	2015	2	9	YES	YES
	2025	2	5	YES	YES
	2035	2	5	YES	YES

The SJVAPCD 2007 PM_{10} Maintenance Plan, which relies on the 2003 PM_{10} Plan for emissions reductions measures allows trading from the motor vehicle emissions "budget" for the PM_{10} precursor NOx to the motor vehicle emissions budget for primary PM_{10} using a 1.5 to 1 ratio. The trading mechanism allows the agencies responsible for demonstrating transportation conformity in the San Joaquin Valley to supplement the 2005 budget for PM_{10} with a portion of the 2005 budget for NOx, and use these adjusted motor vehicle emissions budgets for PM_{10} and NOx to demonstrate transportation conformity with the PM_{10} Maintenance Plan for analysis years after 2005. The approved PM_{10} trading mechanism recognizes NOx precursor emissions result in the formation of PM_{10} emissions at a rate of 1 ton of PM_{10} for every 1.5 tons of NOx.

Documentation of this can be found in the 2011 Conformity Analysis for the 2011 RTP Amendment No.1.

Similar to the analysis documenting compliance with federal standards, the term "budget" after scenario year represents a not to exceed value. The term base year after a scenario year in the tables below also reflects a not to exceed value against which future emissions from the 2011 RTP Amendment No.1 are measured.

For this analysis, only on-road mobile sources are considered as the 2011 RTP Amendment No.1 does not impact the implementation of any SJVAPCD or EKCAPCD regulations or incentives on other emissions source categories.

- Results of the Analysis

As shown in Tables 23 through 27, the total emissions in each scenario year for each pollutant is less than the emissions "budget" as established in the applicable plans. As previously noted, the emissions "budget" for each criteria pollutant is a "threshold" or "not to exceed" value for emissions. These tables demonstrate that the 2011 RTP Amendment No.1 contributes to positive progress toward the attainment of State ambient air quality standards. These tables also demonstrate that the 2011 RTP Amendment No.1 is consistent with the SJVAPCD and EKCAPCD Plans, including their regulations and incentives relative to motor vehicle emissions budgets.

While Tables 25 and 26 (PM_{10}) document that PM_{10} emissions grow in 2035, it should be noted that PM_{10} and $PM_{2.5}$ precursor NOx emissions continue to decrease. By reducing the PM_{10} and $PM_{2.5}$ precursor emissions, the 2011 RTP and Amendment No. 1 will reduce the potential for the formation of PM_{10} and $PM_{2.5}$ respectively. Additionally, it should be noted that PM_{10} emissions in 2035 as well as $PM_{2.5}$ emissions in 2035 still remain below the motor vehicle emissions thresholds (i.e. "budget year" and "base year"); therefore the emissions comply with the SJVAPCD and EKCAPCD Plans to reduce PM_{10} and $PM_{2.5}$ emissions. Collectively, this demonstrates compliance with the State ambient air quality standards for PM_{10} and $PM_{2.5}$

TABLE 23
Ozone, ROG, and NO_X Emissions Test – Kern SJVAB
(Summer Tons per Day)

Pollutant	Emissions (Tons/Day)		%Below Budget		% Reduction/Year	
	ROG	NOX	ROG	NOX	ROG	NOX
2011 Budget	15.7	79.4	N/A	N/A	N/A	N/A
2011	14.1	72.4	10.19%	8.82%	--	--
2014 Budget	13.5	64.1	N/A	N/A	N/A	N/A
2014	12.0	57.2	11.11%	10.76%	5.23%	7.55%
2017 Budget	11.6	49.5	N/A	N/A	N/A	N/A
2017	10.2	43.5	12.07%	12.12%	5.25%	8.14%
2023	8.2	27.7	29.31%	44.04%	4.42%	7.69%
2025	7.9	25.4	31.90%	48.69%	4.05%	7.21%
2035	7.5	23.3	35.34%	52.93%	2.60%	4.61%

Source: Kern COG, 2011

TABLE 24
Ozone, ROG, and NO_X Emissions Test – Eastern Kern
(Summer Tons per Day)

Pollutant	Emissions (Tons/Day)		%Below Budget		% Reduction/Year	
	ROG	NOX	ROG	NOX	ROG	NOX
2008 Budget	5	18	N/A	N/A	N/A	N/A
2017	3	13	40.00%	27.78%	--	--
2023	2	9	60.00%	50.00%	6.53%	5.94%
2025	2	5	60.00%	72.22%	4.94%	11.26%
2035	2	5	60.00%	72.22%	2.23%	5.17%

Source: Kern COG, 2011

TABLE 25
PM_{10} Emissions – Kern SJVAB
(Annual Tons per Day)

Pollutant	Emissions (Tons/Day)		%Below Budget		% Reduction/Year	
	PM-10	NOX	PM-10	NOX	PM-10	NOX
Adjusted 2020 Budget	14.7	39.5	N/A	N/A	N/A	N/A
2020	12.7	34.1	13.61%	13.67%	--	--
Adjusted 2020 Budget	14.7	39.5	N/A	N/A	N/A	N/A
2025	12.9	25.6	12.24%	35.19%	0.00%	5.57%
Adjusted 2020 Budget	16.6	36.7	N/A	N/A	N/A	N/A
2035	16.6	23.4	0.00%	36.24%	0.00%	2.48%

Source: Kern COG, 2011

TABLE 26
PM_{10} Emissions – Eastern Kern
(Annual Tons per Day)

Pollutant	Emissions (Tons/Day)	%Below Budget	% Reduction/ Year
	PM-10	PM-10	PM-10
2001 Budget	1.6	N/A	N/A
2011	1.2	25.00%	--
2013 Budget	1.7	N/A	N/A
2013	1.0	41.18%	8.71%
2015	0.9	47.06%	6.94%
2025	1.1	35.29%	0.62%
2035	1.3	23.53%	0.00%

Source: Kern COG, 2011

TABLE 27
$PM_{2.5}$ Emissions – SJVAB
1997 $PM_{2.5}$ - 24-Hour & Annual Standards and 2006 24-Hour Standard

Pollutant	Emissions (Tons/Day)		%Below Budget		% Reduction/Year	
	PM-2.5	NOX	PM-2.5	NOX	PM-2.5	NOX
2012 Budget	3.0	74.2	N/A	N/A	N/A	N/A
2012	2.7	67.7	10.00%	8.76%	--	--
2014	2.4	57.4	20.00%	22.64%	5.72%	7.92%
2017	1.9	43.1	36.67%	41.91%	6.79%	8.64%
2025	1.4	24.1	53.33%	67.52%	4.93%	7.64%
2035	1.4	21.9	53.33%	70.49%	2.82%	4.79%

Source: Kern COG, 2011

Significance After Mitigation

The Project will result in beneficial effects of system-wide improvement in traffic flows and reduced congestion, which would reduce the potential for increased air emissions. The SJVAPCD and EKCAPCD Plans all document the Districts' plans to achieve the State ambient air quality standards, and as such, compliance with the regulations and incentives contained in the plans results in compliance with the State ambient air quality standards. Based on the air quality analysis, the 2011 RTP Amendment No.1 conforms to the applicable SJVAPCD and EKCAPCD plans and demonstrates progress toward attainment with the State ambient air quality standards for PM_{10}, $PM_{2.5}$ and Ozone. As a result, implementation of the 2011 RTP Amendment No.1 would result in a ***less than significant*** impact to PM_{10}, $PM_{2.5}$, and Ozone consistent with the finding made in the 2011 RTP SEIR. While the 2011 RTP Amendment No.1 does contribute to an ongoing violation, it does not impede the above referenced plans and regulations. It is understood that the air quality in the Kern County needs significant improvement. To that end, this SEIR Addendum identifies all feasible mitigation measures to improve air quality and will not create a new violation or worsen existing violations.

Impact 3.3.4

Create Objectionable Odors Affecting a Substantial Number of People

Implementation of the RTP and RTP Amendment No. 1 would not directly create or generate objectionable odors. Persons residing in the immediate vicinity of proposed improvements may be subject to temporary odors typically associated with roadway construction activities (diesel exhaust, hot asphalt, etc.). However, any odors generated by construction activities would be minor and would be short and temporary in duration. This is considered a ***less than significant*** impact.

Impact 3.3.5

Contribute Substantially to, or Result in a Cumulatively Considerable Net Increase of Mobile Source Air Toxics

- Mobile Source Air Toxics (MSAT) Background

  Controlling air toxic emissions became a national priority with the passage of the (CAAA) of 1990, whereby Congress mandated that EPA regulate 188 air toxics, also known as hazardous air pollutants. The EPA has assessed this expansive list in their latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007) and identified a group of 93 compounds emitted from mobile sources. In addition, EPA identified seven compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers from their 1999 National Air Toxics Assessment. These are acrolein, benzene, 1,3-butidiene, diesel particulate matter plus diesel exhaust organic gases (diesel PM), formaldehyde, naphthalene, and polycyclic organic matter.

  - National MSAT Trends

    The 2007 EPA rule requires controls that will dramatically decrease Mobile Source Air Toxics (MSAT) emissions through cleaner fuels and cleaner engines. According to an FHWA analysis using EPA's MOBILE6.2 model, even if vehicle activity (VMT) increases by 145 percent, a combined reduction of 72 percent in the total annual emission rate for the priority MSAT is projected from 1999 to 2050, as shown in Figure 6 on the following page.

  - Local MSAT Trends (Monitoring in Kern County)

    Estimation of Risk: CARB monitors toxics throughout California, including one site in Kern County: California Avenue. Data obtained from this monitoring site between 1989 and 2009 is shown in Tables 28 through 37. The estimated risks shown in CARB's annual toxics summaries in the tables below are estimated chronic cancer risk (acute risks and non-cancer risks are not shown) resulting from the inhalation pathway. These risks are expressed in terms of expected cancer cases per million population based on exposure to the annual mean concentration over 70 years. They are calculated using unit risk factors provided to the CARB by the California Office of Environmental Health Hazard Assessment.

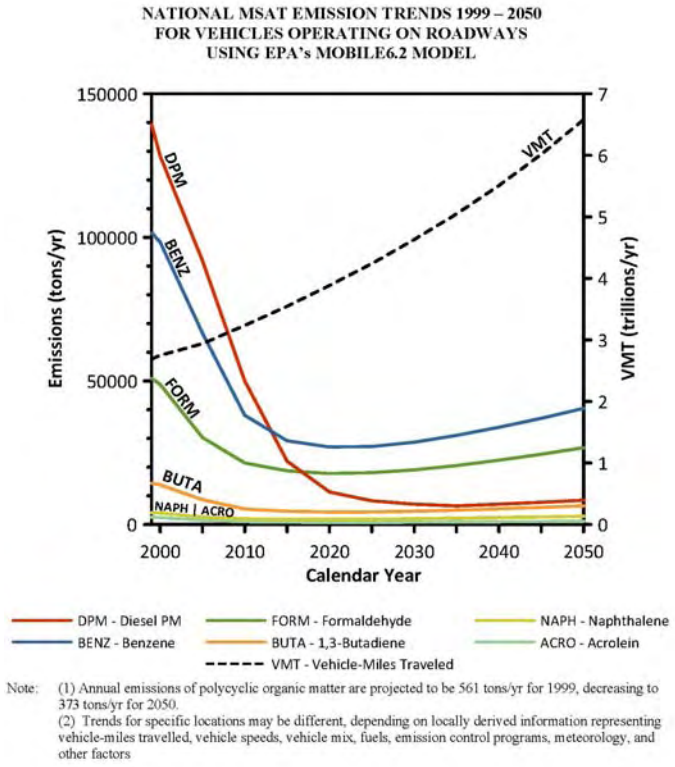
    Based on monitoring results in Tables 28 through 37, toxic emissions are generally declining. To address emissions that are increasing (Butadiene, Benzene, and Formaldehyde) Kern COG will continue to provide any available data as requested by the SJVAPCD as they research the cause and impacts. In addition, a mitigation measure has been added to address project level impacts.

- Diesel Particulate Emissions

  Diesel Particulate emissions were quantified for the San Joaquin Valley portions of State Route 99 (SR-99) and Interstate 5 (I-5) to determine the impacts of diesel particulate matter (PM_{10} and $PM_{2.5}$) on the residents

of the San Joaquin Valley. Future project emissions were compared to existing baseline emissions to determine if diesel particulate emissions increase over time as a result of the 2011 RTP.

FIGURE 6



The 2035 annual average daily traffic (AADT) projections for trucks travelling the I-5 and SR-99 corridors were developed using Caltrans truck traffic counts on the SR-99 and I-5 corridors from 2000 through 2008. To develop a "worst case" emissions estimate, vehicle miles of travel associated with the 2035 truck projections were developed by multiplying the length of SR-99 or I-5 by the highest truck volume segment (SR-99 Kern County JCT. RTE. 58 WEST, JCT. RTE. 178 EAST (Leg A): 32,450 Truck AADT and I-5 San Joaquin County I-5 Jct. Rte 205 West (Leg A): 42,240 Truck AADT) in 2008. This approach is deemed conservative, as all other I-5 and SR-99 segments have truck volumes less than or equal to the highest segment respectively. This approach assumes the highest truck volumes occur across all segments of SR-99 and I-5 in the San Joaquin Valley.

TABLE 28
City of Bakersfield – California Avenue Monitoring Site
(1, 3, Butadiene Measurements)

Year	Minimum	Median	Mean	90th Percentile	Max.	Stan Dev.	Number of Observations	Detection Limit	Estimated Risk
2009	0.02	0.05	0.068	0.16	0.26	0.062	34	0.04	26
2008	0.02	0.04	0.066	0.17	0.2	0.061	33	0.04	25
2007	0.02	0.02	0.05	0.13	0.18	0.048	32	0.04	19
2006	0.02	0.02	0.063	0.16	0.26	0.064	30	0.04	24
2005	0.02	0.02	0.062	0.12	0.25	0.062	31	0.04	23
2004	0.02	0.02	*	0.14	0.22	0.058	25	0.04	*
2003	0.02	0.06	0.063	0.1	0.24	0.052	29	0.04	24
2002	0.02	0.07	0.099	0.23	0.3	0.081	30	0.04	37
2001	0.02	0.11	0.138	0.3	0.6	0.136	31	0.04	52
2000	0.02	0.06	0.126	0.37	0.52	0.142	31	0.04	47
1999	0.02	0.1	0.153	0.35	0.62	0.136	30	0.04	58
1998	0.02	0.16	0.2	0.44	0.57	0.153	31	0.04	75
1997	0.02	0.11	0.16	0.28	0.55	0.12	33	0.04	60
1996	0.02	0.14	0.211	0.41	1.1	0.22	32	0.04	79
1995	0.02	0.16	0.206	0.43	0.86	0.199	32	0.04	78
1994	0.02	0.31	*	0.89	1.8	0.404	23	0.04	*
1993	*	*	*	*	*	*	0	*	*
1992	*	*	*	*	*	*	0	*	*
1991	*	*	*	*	*	*	0	*	*
1990	*	*	*	*	*	*	0	*	*
1989	*	*	*	*	*	*	0	*	*

* Means there was insufficient (or no) data available to determine the value
Source: California Air Resources Board, 2011

TABLE 29
City of Bakersfield – California Avenue Monitoring Site
(Benzene Measurements)

Year	Minimum	Median	Mean	90th Percentile	Max.	Stan Dev.	Number of Observations	Detection Limit	Estimated Risk
2009	0.07	0.28	0.325	0.65	1.1	0.238	34	0.05	30
2008	0.1	0.26	0.354	0.74	0.94	0.239	33	0.05	33
2007	0.07	0.24	0.31	0.75	0.82	0.224	32	0.05	29
2006	0.12	0.29	0.383	0.7	1.2	0.264	30	0.05	35
2005	0.09	0.32	0.355	0.64	1	0.222	31	0.05	33
2004	0.09	0.33	*	0.63	0.76	0.195	25	0.05	*
2003	0.13	0.35	0.405	0.61	1.1	0.224	29	0.05	37
2002	0.1	0.37	0.506	1.01	1.3	0.32	30	0.05	47
2001	0.14	0.34	0.549	1.2	1.8	0.421	31	0.05	51
2000	0.1	0.4	0.58	1.3	2	0.52	31	0.2	54
1999	0.1	0.5	0.71	1.5	2.2	0.5	30	0.2	66
1998	0.1	0.6	0.7	1.4	2	0.48	31	0.2	65
1997	0.1	0.6	0.57	1	1.7	0.38	32	0.2	53
1996	0.25	0.25	0.78	1.7	3.7	0.81	32	0.5	72
1995	0.25	1.3	1.14	2.3	3.7	0.94	32	0.5	106
1994	0.25	1.2	*	2	3.2	0.78	23	0.5	*
1993	*	*	*	*	*	*	0	*	*
1992	*	*	*	*	*	*	0	*	*
1991	*	*	*	*	*	*	0	*	*
1990	*	*	*	*	*	*	0	*	*
1989	*	*	*	*	*	*	0	*	*

* Means there was insufficient (or no) data available to determine the value
Source: California Air Resources Board, 2011

TABLE 30
City of Bakersfield – California Avenue Monitoring Site
(Formaldehyde Measurements)

Year	Minimum	Median	Mean	90th Percentile	Max.	Stan Dev.	Number of Observations	Detection Limit	Estimated Risk
2009	0.7	2.2	2.74	5.2	6.1	1.56	31	0.1	20
2008	0.8	2.6	2.58	4.3	5.5	1.25	30	0.1	19
2007	0.8	2.5	2.61	4.3	4.6	1.15	33	0.1	19
2006	0.6	2.6	2.77	4.6	6.6	1.35	34	0.1	20
2005	0.5	2.6	2.61	4.6	5.3	1.37	34	0.1	19
2004	0.8	2.3	*	3.3	3.6	0.76	25	0.1	*
2003	0.9	3.1	3.43	5.4	8.5	1.78	32	0.1	25
2002	0.7	3.4	3.15	4.3	5.4	1.1	36	0.1	23
2001	0.6	2.7	3.44	5.6	14	2.35	35	0.1	25
2000	1	2.5	2.79	5.3	5.9	1.45	38	0.1	21
1999	0.5	3.9	3.67	5.3	6.4	1.4	31	0.1	27
1998	0.5	3	2.99	5.4	6.2	1.6	34	0.1	22
1997	1.4	3.2	3.12	4.2	4.4	0.85	30	0.1	23
1996	1.3	3.2	3.48	5.6	8	1.75	35	0.1	26
1995	0.3	1.6	1.92	3.8	5.5	1.48	31	0.1	14
1994	0.3	1.3	*	2.8	4.6	0.99	25	0.1	*
1993	*	*	*	*	*	*	0	*	*
1992	*	*	*	*	*	*	0	*	*
1991	*	*	*	*	*	*	0	*	*
1990	*	*	*	*	*	*	0	*	*
1989	*	*	*	*	*	*	0	*	*

* Means there was insufficient (or no) data available to determine the value
Source: California Air Resources Board, 2011

TABLE 31
City of Bakersfield – California Avenue Monitoring Site
(Acrolein Measurements)

Year	Minimum	Median	Mean	90th Percentile	Max.	Stan Dev.	Number of Observations	Detection Limit
2009	0.3	0.5	0.63	0.8	1.8	0.28	34	0.3
2008	0.3	0.6	0.7	1	1.6	0.31	33	0.3
2007	0.15	0.6	0.55	0.9	1.2	0.25	32	0.3
2006	0.15	0.6	0.6	0.9	1.3	0.26	30	0.3
2005	0.15	0.4	0.55	0.8	5.2	0.88	31	0.3
2004	0.15	0.4	*	0.8	0.9	0.22	24	0.3
2003	0.3	0.6	*	1.3	2.1	0.5	13	0.3

* Means there was insufficient (or no) data available to determine the value
Source: California Air Resources Board, 2011

TABLE 32
City of Bakersfield – California Avenue Monitoring Site
(Benzo(a)pyrene-10)

Year	Minimum	Median	Mean	90th Percentile	Max.	Stan Dev.	Number of Observations	Detection Limit	Estimated Risk
2005	0.025	*	*	*	0.26	0.092	5	0.05	*
2004	0.025	0.025	0.132	0.33	1.1	0.227	29	0.05	0.1
2003	0.025	0.025	0.131	0.43	1.1	0.238	31	0.05	0.1
2002	0.025	0.025	0.19	0.5	1	0.259	30	0.05	0.2
2001	0.025	0.025	0.187	0.59	1.7	0.389	31	0.05	0.2
2000	0.025	0.025	0.197	0.52	1.6	0.359	30	0.05	0.2
1999	0.025	0.025	0.208	0.7	1.2	0.356	30	0.05	0.2
1998	0.025	0.07	0.196	0.62	1.4	0.322	31	0.05	0.2
1997	0.025	0.05	0.282	0.57	2.3	0.476	30	0.05	0.3
1996	0.025	0.06	0.219	0.58	1.3	0.366	24	0.05	0.2
1995	0.025	0.09	0.255	0.49	1.9	0.436	24	0.05	0.3
1994	0.07	*	*	*	3.3	1.07	8	0.05	*
1993	*	*	*	*	*	*	0	*	*
1992	*	*	*	*	*	*	0	*	*
1991	*	*	*	*	*	*	0	*	*
1990	*	*	*	*	*	*	0	*	*
1989	*	*	*	*	*	*	0	*	*

* Means there was insufficient (or no) data available to determine the value
Source: California Air Resources Board, 2011

TABLE 33
City of Bakersfield – California Avenue Monitoring Site
(Benzo(b)fluoranthene-10)

Year	Minimum	Median	Mean	90th Percentile	Max.	Stan Dev.	Number of Observations	Detection Limit	Estimated Risk
2005	0.07	*	*	*	0.35	0.118	5	0.05	*
2004	0.025	0.06	0.177	0.45	1.1	0.253	29	0.05	0.02
2003	0.025	0.06	0.19	0.65	0.88	0.263	31	0.05	0.02
2002	0.025	0.025	0.254	0.76	1.3	0.355	30	0.05	0.03
2001	0.025	0.06	0.229	0.64	2.5	0.499	31	0.05	0.03
2000	0.025	0.025	0.241	0.63	1.6	0.407	30	0.05	0.03
1999	0.025	0.07	0.269	0.81	1.6	0.444	30	0.05	0.03
1998	0.025	0.11	0.244	0.71	1.5	0.368	31	0.05	0.03
1997	0.025	0.08	0.332	0.63	2.5	0.524	30	0.05	0.04
1996	0.025	0.08	0.216	0.58	1.1	0.298	24	0.05	0.02
1995	0.025	0.15	0.276	0.6	1.5	0.355	24	0.05	0.03
1994	0.13	*	*	*	3.1	0.973	8	0.05	*
1993	*	*	*	*	*	*	0	*	*
1992	*	*	*	*	*	*	0	*	*
1991	*	*	*	*	*	*	0	*	*
1990	*	*	*	*	*	*	0	*	*
1989	*	*	*	*	*	*	0	*	*

* Means there was insufficient (or no) data available to determine the value
Source: California Air Resources Board, 2011

TABLE 34
City of Bakersfield – California Avenue Monitoring Site
(Benzo(g, h, i)perylene-10)

Year	Minimum	Median	Mean	90th Percentile	Max.	Stan Dev.	Number of Observations	Detection Limit
2005	0.13	*	*	*	0.47	0.152	5	0.05
2004	0.025	0.09	0.305	1.04	1.3	0.416	29	0.05
2003	0.025	0.15	0.305	1.2	1.4	0.411	31	0.05
2002	0.025	0.12	0.384	1.13	2	0.55	30	0.05
2001	0.025	0.15	0.304	0.87	2.4	0.536	31	0.05
2000	0.025	0.12	0.396	1.06	2.5	0.645	30	0.05
1999	0.025	0.14	0.414	1.25	2.1	0.581	30	0.05
1998	0.025	0.22	0.438	1.5	2	0.549	31	0.05
1997	0.025	0.2	0.588	1.3	3	0.753	30	0.05
1996	0.025	0.19	0.374	1.03	1.6	0.428	24	0.05
1995	0.025	0.34	0.542	1.58	2.1	0.597	24	0.05
1994	0.32	*	*	*	4.4	1.34	8	0.05
1993	*	*	*	*	*	*	0	*
1992	*	*	*	*	*	*	0	*
1991	*	*	*	*	*	*	0	*
1990	*	*	*	*	*	*	0	*
1989	*	*	*	*	*	*	0	*

* Means there was insufficient (or no) data available to determine the value
Source: California Air Resources Board, 2011

TABLE 35
City of Bakersfield – California Avenue Monitoring Site
(Benzo(k)fluoranthene-10)

Year	Minimum	Median	Mean	90th Percentile	Max.	Stan Dev.	Number of Observations	Detection Limit	Estimated Risk
2005	0.025	*	*	*	0.13	0.053	5	0.05	*
2004	0.025	0.025	0.076	0.19	0.45	0.099	29	0.05	0.008
2003	0.025	0.025	0.089	0.29	0.48	0.122	31	0.05	0.01
2002	0.025	0.025	0.115	0.33	0.56	0.148	30	0.05	0.01
2001	0.025	0.025	0.1	0.26	1	0.204	31	0.05	0.01
2000	0.025	0.025	0.105	0.26	0.65	0.165	30	0.05	0.01
1999	0.025	0.025	0.114	0.35	0.64	0.178	30	0.05	0.01
1998	0.025	0.025	0.106	0.27	0.61	0.153	31	0.05	0.01
1997	0.025	0.025	0.149	0.3	1.1	0.228	30	0.05	0.02
1996	0.025	0.025	0.09	0.23	0.48	0.127	24	0.05	0.01
1995	0.025	0.06	0.132	0.32	0.8	0.183	24	0.05	0.01
1994	0.05	*	*	*	1.3	0.409	8	0.05	*
1993	*	*	*	*	*	*	0	*	*
1992	*	*	*	*	*	*	0	*	*
1991	*	*	*	*	*	*	0	*	*
1990	*	*	*	*	*	*	0	*	*
1989	*	*	*	*	*	*	0	*	*

* Means there was insufficient (or no) data available to determine the value
Source: California Air Resources Board, 2011

TABLE 36
City of Bakersfield – California Avenue Monitoring Site
(Dbenz(a, h)anthracene-10)

Year	Minimum	Median	Mean	90th Percentile	Max.	Stan Dev.	Number of Observations	Detection Limit	Estimated Risk
2005	0.025	*	*	*	0.06	0.016	5	0.05	*
2004	0.025	0.025	0.033	0.06	0.14	0.024	29	0.05	0.01
2003	0.025	0.025	0.034	0.07	0.14	0.026	31	0.05	0.01
2002	0.025	0.025	0.046	0.09	0.22	0.044	30	0.05	0.02
2001	0.025	0.025	0.033	0.025	0.21	0.035	31	0.05	0.01
2000	0.025	0.025	0.038	0.07	0.18	0.034	30	0.05	0.01
1999	0.025	0.025	0.042	0.1	0.22	0.053	30	0.05	0.02
1998	0.025	0.025	0.032	0.025	0.18	0.03	31	0.05	0.01
1997	0.025	0.025	0.036	0.06	0.13	0.026	30	0.05	0.01
1996	0.025	0.025	0.027	0.025	0.05	0.007	24	0.05	0.01
1995	0.025	0.025	0.03	0.025	0.11	0.018	24	0.05	0.01
1994	0.025	*	*	*	0.23	0.071	8	0.05	*
1993	*	*	*	*	*	*	0	*	*
1992	*	*	*	*	*	*	0	*	*
1991	*	*	*	*	*	*	0	*	*
1990	*	*	*	*	*	*	0	*	*
1989	*	*	*	*	*	*	0	*	*

* Means there was insufficient (or no) data available to determine the value
Source: California Air Resources Board, 2011

TABLE 37
City of Bakersfield – California Avenue Monitoring Site
(Indeno(1,2,3-cd)pyrene-10)

Year	Minimum	Median	Mean	90th Percentile	Max.	Stan Dev.	Number of Observations	Detection Limit	Estimated Risk
2005	0.05	*	*	*	0.29	0.097	5	0.05	*
2004	0.025	0.025	0.162	0.39	1.1	0.245	29	0.05	0.02
2003	0.025	0.025	0.181	0.62	0.87	0.252	31	0.05	0.02
2002	0.025	0.025	0.261	0.81	1.3	0.376	30	0.05	0.03
2001	0.025	0.06	0.248	0.66	2.4	0.511	31	0.05	0.03
2000	0.025	0.025	0.266	0.71	1.7	0.432	30	0.05	0.03
1999	0.025	0.07	0.297	1.02	1.7	0.475	30	0.05	0.03
1998	0.025	0.13	0.284	1	1.5	0.415	31	0.05	0.03
1997	0.025	0.09	0.338	0.8	2.1	0.482	30	0.05	0.04
1996	0.025	0.11	0.234	0.59	1.2	0.309	24	0.05	0.03
1995	0.025	0.16	0.337	0.91	1.9	0.448	24	0.05	0.04
1994	0.13	*	*	*	3.1	0.968	8	0.05	*
1993	*	*	*	*	*	*	0	*	*
1992	*	*	*	*	*	*	0	*	*
1991	*	*	*	*	*	*	0	*	*
1990	*	*	*	*	*	*	0	*	*
1989	*	*	*	*	*	*	0	*	*

* Means there was insufficient (or no) data available to determine the value
Source: California Air Resources Board, 2011

As all trucks are not diesel and do not emit diesel particulate, EMFAC2007 was utilized to determine which percentage of trucks from the Caltrans traffic counts for truck AADT were diesel. EMFAC2007 emissions rates were then utilized to quantify diesel particulate running exhaust emissions on the I-5 and SR-99 corridor respectively for the base year and the 2035 project. Table 38 shows the results of the analysis.

TABLE 38
Running Emissions Summary
(Diesel PM)

SR-99 Emissions (Tons/day)		
	2010	2035
Diesel PM10	1.290558	0.501899
Diesel PM2.5	1.161864	0.411517
VMT per day	3630872	5496425
I-5 Diesel Emissions (Tons/day)		
	2010	2035
Diesel PM10	2.902829	0.496579
Diesel PM2.5	2.61336	0.407155
VMT per day	3258028	5438169

Source: San Joaquin COG, 2010

Mitigation Measure

The following mitigation measure is presented to ensure that MSAT assessments are performed on a project-level, and to ensure that the most current tools and techniques are used for assessing the health risks of MSATs.

- As air toxics research continues, Kern COG will coordinate with responsible agencies that utilize the tools and techniques developed for assessing health outcomes as a result of lifetime MSAT exposure. The potential health risks posed by MSAT exposure should continue to be factored into project-level decision-making in the context of environmental review. Specifically, at the project level, local agencies shall require or perform air toxic risk assessments to determine mobile source air toxic impacts for transportation projects.

Significance After Mitigation

The results from the diesel PM emissions summary for Kern County show that the 2011 RTP and RTP Amendment No. 1 design year emission levels will continue trending downward through the 2035 RTP horizon year. In addition, the U.S. EPA has published an MSAT assessment that demonstrates a national decreasing trend for MSATs including, acrolein, benzene, 1,3-butidiene, diesel particulate matter plus diesel exhaust organic gases (diesel PM), naphthalene, and polycyclic organic matter. California maintains stricter standards for clean fuels and emissions compared to the national standards, therefore it is expected that MSAT trends in California will decrease consistent with or more than the U.S. EPA's national projections. Implementation of the proposed project will have a ***less than significant*** impact.

SEIR SECTION 3.5 –CLIMATE CHANGE

This section includes a discussion of global climate change, its causes and the contribution of human activities, as well as a summary of existing greenhouse gas (GHG) emissions. This section also describes the criteria for determining the significance of climate change impacts, and estimates the likely GHG emissions that would result from vehicular traffic and other emission sources related to the Project. Where appropriate, mitigation measures are recommended to reduce project-related impacts.

Environmental Setting

Climate refers to any significant change in measures of climate (such as temperature, precipitation, or wind) lasting for an extended period (decades or longer). Global Climate Change (GCC) means a shift in the climate of the earth as a whole that occurs naturally as in the case of the ice age. According to CARB, the climate change that is occurring today differs from previous climate changes in both time and scale.

Gases that catch heat in the atmosphere are regularly called greenhouse gases (GHGs). The Earth's surface temperature would be about 61 degrees Fahrenheit colder than it is currently if it were not for the innate heat trapping effect of GHGs. The buildup of these gases in the earth's atmosphere is considered the source of the observed increase in the earth's temperature (global warming). Some GHGs such as carbon dioxide occur naturally in nature and are emitted to the atmosphere through natural processes and as well as through anthropocentric activities. Other GHGs (e.g., fluorinated gases) are created and emitted solely through human activities.

Since the Industrial Revolution (circa 1750), global concentrations of carbon dioxide (CO_2) have risen about 36%, chiefly due to the burning of fossil fuels. Questions remain about the amount of warming that will occur, how rapidly it will occur, and how the warming will affect the rest of the climate system including weather events.

The United Nations Intergovernmental Panel on Climate Change constructed several emission trajectories of GHGs needed to stabilize global temperatures and climate change impacts. The Panel concluded that a stabilization of GHGs at 400 to 450 parts per million (ppm) CO_2 equivalent concentration is required to keep global mean warming below 3.6º Fahrenheit (2º Celsius). This is presumed necessary to avoid dangerous climate change (Association of Environmental Professionals, 2007).

State law defines GHG as any of the following compounds: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur hexafluoride (SF_6) (California Health and Safety Code Section 38505(g).) CO_2, followed by CH_4 and N_2O, are the most common GHGs that result from human activity. The characteristics of state defined GHGs are described below:

- Carbon dioxide – CO_2 results from fossil fuel combustion in stationary and mobile sources. It contributes to the greenhouse effect, but not to stratospheric ozone depletion. In 2004, CO_2 accounted for approximately 84 percent of total GHG emissions in the state (CEC, 2006);

- Methane – CH_4 can also be divided into anthropogenic (i.e., resulting from human activities and/or processes) and natural sources. Anthropogenic sources include rice agriculture, livestock, landfills, and waste treatment, some biomass burning, and fossil fuel combustion. Natural sources are wetlands, oceans, forests, fire, termites and geological sources. Anthropogenic sources currently account for more than 60 percent of the total global emissions; and

- Other regulated GHGs include Nitrous Oxide (N_20), Sulfur Hexafluoride (S_6), Hydrofluorocarbons (HFC), and Perfluorocarbons (PFC) - These gases all possess heat-trapping characteristics that are greater than CO_2. Emission sources of nitrous oxide gases include, but are not limited to, waste combustion, waste water treatment, fossil fuel combustion, and fertilizer production. Because the volume of emissions is small, the net effect of nitrous oxide emissions relative to CO_2 or CH4 is relatively small. SF6, HFC, and PFC emissions occur at even lower rates.

Over the last 200 years, human activities have caused substantial quantities of GHGs to be released into the atmosphere. These extra emissions are increasing GHG concentrations in the atmosphere, and enhancing the natural greenhouse effect, which is believed to be causing global warming. While manmade GHGs include naturally-occurring GHGs such as CO_2, methane, and N_2O, some gases, like HFCs, PFCs, and SF_6 are completely new to the atmosphere.

Certain other gases, such as water vapor, are short-lived in the atmosphere. Others remain in the atmosphere for significant periods of time, contributing to climate change over the long-term. 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.

Globally, climate change has the potential to impact numerous environmental resources through potential, though uncertain, impacts related to future air temperatures and precipitation patterns. Scientific modeling predicts that continued GHG at or above current rates would induce more extreme climate changes during the 21st century than were observed during the 20th century. A warming of about 0.2°C (0.36° Fahrenheit) per decade is projected, and there are identifiable signs that global warming is taking place, including substantial ice loss in the Arctic.

However, the understanding of GHG emissions, particulate matter, and aerosols on global climate trends remains uncertain. In addition to uncertainties about the extent to which human activity rather than solar or volcanic activity is responsible for increasing warming, there is also evidence that some human activity has cooling, rather than warming, effects, as discussed in detail in numerous publications by the International Panel on Climate Change (IPCC), namely “Climate Change 2001, The Scientific Basis”(2001).

Climate change modeling shows that further warming could occur, which would induce additional changes in the global climate system during the current century. GHGs have the potential to affect the environment because such emissions are believed to contribute cumulatively to global climate change. Although GHG emissions from one single project will not by themselves cause global climate change, it is thought that GHG emissions from multiple projects, past, present and future throughout the world may collectively result in a cumulative impact with respect to global climate change.

It is speculated that global climate change could contribute to rising sea levels, which can inundate low-lying areas; impact rainfall and snowfall, which could change water supply, affect habitat, which could affect biological resources, along with other unknown effects.

The consumption of nonrenewable energy (primarily gasoline and diesel fuel) associated with construction activities and the operation of passenger, public transit, and commercial vehicles results in GHG emissions that cause global climate change. In addition, alternative fuels like natural gas including CNG and liquefied natural gas (LNG), ethanol, and electricity (unless derived from solar, wind, nuclear, or another energy source that does not produce carbon emissions) also result in GHG emissions and contribute to global climate change.

Climate models indicate that temperatures in California may rise by 4.7°F to 10.5°F by the end of the century if GHG emissions continue to proceed at a medium or high rate (CEC, 2006). Lower emission rates would reduce the projected warming to 3.0°F to 5.6° Fahrenheit. Almost all climate scenarios include a continuing trend of warming through the end of the century given the amounts of GHGs already released, and the difficulties associated with reducing emissions to a level that would stabilize the climate. Total GHG emissions in California have been approximated by CARB, which found that 468 MMT of CO_2E GHG emissions were produced in California in 2004. CARB also found transportation to be the source of 38 percent of the State's GHG emissions; followed by electricity generation at 25 percent and industrial sources at 20 percent.

Global climate change is a problem caused by cumulative worldwide GHG emissions. Mitigating global climate change will require worldwide solutions. Combined gases in the earth's GHGs plays a critical role in the earth's radiation budget by trapping infrared radiation emitted from its surface, which otherwise could have escaped to space. Prominent GHGs contributing to this process include water vapor, carbon dioxide, methane, ozone, nitrous oxide, and certain fluorocarbons. This phenomenon, known as the "greenhouse effect", keeps the earth's atmosphere near the surface warmer than it would be under other circumstances. Increases in these gases leads to higher radiation absorption, thereby warming the lower atmosphere and increasing evaporation rates and temperatures near the surface.

Emissions of the GHGs in excess of natural ambient concentrations are thought to be responsible for enhancing the greenhouse effect and contribute to what is termed "global warming", or the unnatural warming of the earth's natural climate. Climate change is a global problem, and GHGs are global pollutants, unlike criteria air pollutants (such as ozone precursors). Worldwide, California is the 12th to 16th largest emitter of carbon dioxide (CO_2), according to the California Energy Commission (CEC), and is responsible for approximately 2% of the world's CO_2 emissions.

The Intergovernmental Panel on Climate Change (IPCC) was established by the World Meteorological Organization and United Nations Environment Programme to assess scientific, technical, and socioeconomic information to further understand climate change, its potential impacts, and options for adaptation and mitigation. The IPCC predicts substantial increases in temperatures globally of between 1.1 to 6.4 degrees Celsius, depending on the scenario studied. This may impact California's natural environment in the following ways:

- Rising sea levels along the California coastline, particularly in the San Francisco Bay Area and within the San Joaquin Delta because of ocean expansion;

- Extreme-heat conditions, such as heat waves and very high temperatures, which could last longer and become more frequent;
- An increase in heat-related human deaths, infectious diseases, and a higher risk of respiratory problems caused by deteriorating air quality;
- Reduced snow pack and stream flow in the Sierra Nevada mountains, affecting winter recreation and water supplies;
- Potential increases in the severity of winter storms, affecting peak stream flows and flooding;
- Changes in growing season conditions that could affect California agriculture, causing variations in crop quality and yield;
- Changes in the distribution of plant and wildlife species because of changes in temperature, competition from colonizing species, changes in hydrologic cycles, changes in sea levels, and other climate-related effects;
- Increase in the number of days conducive to ozone formation by 25 to 85 percent (depending on the future temperature scenario) in high ozone areas of Los Angeles and the San Joaquin Valley by the end of the 21st century; and
- High potential for erosion of California's coastlines and seawater intrusion into the Delta and levee systems due to the rise in sea level.

Changes in California's climate and ecosystems are occurring at a time when the State's population is expected to increase from 34 to 59 million by 2040, according to the CEC. The current inventory covers the years 1990 to 2004, and is summarized in Table 39. As such, the number of people potentially affected by climate change, as well as the amount of anthropogenic GHG emissions expected under a "business as usual" scenario, is expected to increase.

TABLE 39
State of California GHG Emissions by Sector[1]

Sector	Total 1990 Emissions (MMT CO_2E[2])	Percent of Total 1990 Emissions	Total 2004 Emissions ($MMTCO_2E$)	Percent of Total 2004 Emissions
Agriculture	23.4	5%	27.9	6%
Commercial	14.4	3%	12.8	3%
Electricity	110.6	26%	119.8	25%
Forestry	0.2	<1%	0.2	<1%
Industrial	103	24%	96.2	20%
Residential	29.7	7%	29.1	6%
Transportation	150.7	35%	182.4	38%
Forestry Sinks	-6.7		-4.7	
Total	432	100%	468	100%

[1]Source: Staff Report – California 1990 Greenhouse Gas Emissions Level and 2020 Emissions Limit, California Air Resources Board, November 16, 2007.
[2]MMT CO_2E refers to million metric tons of CO_2 equivalent emissions.

Emissions of carbon dioxide and nitrous oxide are byproducts of fossil fuel combustion, among other sources. Methane, a highly potent GHG, results from off-gassing associated with agricultural practices and landfills, among other sources. Sinks of carbon dioxide include uptake by vegetation and dissolution into the ocean.

Regulatory

Federal

In 1988, the United Nations established the Intergovernmental Panel on Climate Change to assess the impacts of global warming and to develop strategies that nations could apply to curb global climate change. In 1992, the United States joined other countries around the world in signing the United Nations' Framework Convention on Climate Change treaty with the goal of controlling greenhouse gas emissions.

As a result, the Climate Change Action Plan was developed to address reduction of GHG in the United States. The plan is comprised of more than 50 voluntary programs.

Additionally, the Montreal Protocol was first signed in 1987 and considerably amended in 1990 and 1992. The Montreal Protocol instructs that the production and consumption of compounds that deplete ozone in the stratosphere--chlorofluorocarbons (CFCs), halons, carbon tetrachloride, and methyl chloroform--were to be phased out by 2000 (2005 for methyl chloroform).

Recently, in *Massachusetts v. EPA* (April 2, 2007), the U.S. Supreme Court held that GHGs fall within the Clean Air Act's definition of an "air pollutant" and directed the EPA to deem whether GHGs are affecting climate change. The EPA must regulate GHG emissions from automobiles under the CAA if it is determined GHGs do affect climate change. Currently, the EPA has not yet begun rule-making proceedings to judge whether GHGs are contributing to climate change.

In addition, Congress has enlarged the corporate average fuel economy (CAFE´) of the U.S. automotive fleet. In December 2007, President George W. Bush signed a bill increasing the minimum average miles per gallon for cars, sport utility vehicles and light trucks to 35 miles per gallon by 2020. This rise in CAFE´ standard will result in a significant reduction in GHG emissions from automobiles; the largest single emitting GHG group in California.

On April 17, 2009, EPA issued its proposed endangerment finding for GHG emissions. EPA is proposing to find that GHGs in the atmosphere endanger the public health and welfare of current and future generations. Concentrations of GHGs are at unprecedented levels compared to the recent and distant past. EPA has stated that these high atmospheric levels are the unambiguous result of human emissions, and are very likely the cause of the observed increase in average temperatures and other climatic changes. The effects of climate change observed to date and projected to occur in the future – including but not limited to the increased likelihood of more frequent and intense heat waves, more wildfires, degraded air quality, more heavy downpours and flooding, increased drought, greater sea level rise, more intense storms, harm to water resources, harm to agriculture, and harm to wildlife and ecosystems – are effects on public health and welfare within the policies of the CAA.

The U.S. EPA annually publishes the *Inventory of U.S. Greenhouse Gas Emissions and Sinks* for estimating sources of GHGs that is generally consistent with the IPCC methodology developed in its *Guidelines for National Greenhouse Gas Inventories*.

- Energy Policy and Conservation Act

  The Energy Policy and Conservation Act of 1975 sought to ensure that all vehicles sold in the U.S. would meet certain fuel economy goals. Through this Act, Congress established the first fuel economy standards for on-road motor vehicle in the U.S. Pursuant to the Act, the National Highway Traffic and Safety Administration, as a part of the USDOT, is responsible for establishing additional vehicle standards and for revising existing standards.

  Since 1990, the fuel economy standard for new passenger cars has been 27.5 mpg. Since 1996, the fuel economy standard for new light trucks (gross vehicle weight of 8,500 pounds or less) has been 20.7 mpg. Heavy-duty vehicles (i.e., vehicles and trucks over 8,500 pounds gross vehicle weight) are not currently subject to fuel economy standards. Compliance with federal fuel economy standards is determined on the basis of each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the U.S. The Corporate Average Fuel Economy (CAFE) program, which is administered by EPA, was created to determine vehicle manufacturers' compliance with the fuel economy standards. EPA calculates a CAFE value for each manufacturer based on city and highway fuel economy test results and vehicle sales. Based on the information generated under the CAFE program, the USDOT is authorized to assess penalties for noncompliance.

- Energy Policy Act of 1992 (EPAct)

  The Energy Policy Act of 1992 (EPAct) was passed to reduce the country's dependence on foreign petroleum and improve air quality. EPAct includes several parts intended to build an inventory of alternative fuel vehicles (AFVs) in large, centrally fueled fleets in metropolitan areas. EPAct requires certain federal, state, and local government and private fleets to purchase a percentage of light duty AFVs capable of running on alternative fuels each year. In addition, financial incentives are included in EPAct. Federal tax deductions will be allowed for businesses and individuals to cover the incremental cost of AFVs. States are also required by the act to consider a variety of incentive programs to help promote AFVs.

- Energy Policy Act of 2005

  The Energy Policy Act of 2005 was signed into law on August 8, 2005. Generally, the act provides for renewed and expanded tax credits for electricity generated by qualified energy sources, such as landfill gas; provides bond financing, tax incentives, grants, and loan guarantees for clean renewable energy and rural community electrification; and establishes a federal purchase requirement for renewable energy.

- Federal Climate Change Policy

  According to the EPA, "the United States government has established a comprehensive policy to address climate change" that includes slowing the growth of emissions; strengthening science, technology, and

institutions; and enhancing international cooperation. To implement this policy, "the federal government is using voluntary and incentive-based programs to reduce emissions and has established programs to promote climate technology and science." The federal government's goal is to reduce the GHG intensity (a measurement of GHG emissions per unit of economic activity) of the American economy by 18 percent over the 10-year period from 2002 to 2012. In addition, EPA administers multiple programs that encourage voluntary GHG reductions, including "ENERGY STAR", "Climate Leaders", and Methane Voluntary Programs. In addition, there are other adopted federal plans, policies, regulations, or laws directly regulating GHG emissions.

On December 7, 2009, EPA Administrator signed two distinct findings regarding GHGs under section 202(a) of the FCAA:

- Endangerment Finding: The EPA Administrator found that the current and projected concentrations of the six key well-mixed greenhouse gases--carbon dioxide (CO2), methane (CH4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6)--in the atmosphere threaten the public health and welfare of current and future generations; and
- Cause or Contribute Finding: The EPA Administrator found that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution, which threatens public health and welfare.

These findings do not themselves impose any requirements on industry or other entities. However, this action was a prerequisite to finalizing the EPA's proposed GHG emission standards for light-duty vehicles. On May 7, 2010, EPA and the Secretary of Transportation promulgated a joint final rule representing the first substantive federal action to limit emissions of GHGs [75 Fed. Reg. 25324 (May 7, 2010)]. The rule ("GHG Mobile Source Rule") establishes emissions standards for passenger cars and light trucks under Section 202 of the CAA, 42 U.S.C. § 7521, and corporate average fuel efficiency ("CAFE") standards under the Energy Policy and Conservation Act. The standards apply to 2012 and later model year vehicles and will require that fuel efficiency increase and GHG emissions decrease through 2016, by which time the projected combined car and truck fleet will need to achieve the equivalent of 35.5 miles per gallon.

State

Various statewide and local initiatives to reduce California's contribution to GHG emissions have raised awareness that, even though the various contributors to and consequences of global climate change are not yet fully understood, global climate change is occurring. Every nation emits GHGs; therefore, global cooperation will be required to reduce the rate of GHG emissions. Currently no state regulations have been adopted in California that establish ambient air quality standards for GHGs; however, California has passed legislation directing CARB to develop actions to reduce GHG emissions.

- California Strategy to Reduce Petroleum Dependence (AB 2076)

The strategy, *Reducing California's Petroleum Dependence*, was adopted by the CEC and CARB in 2003. The strategy recommends that California reduce on-road gasoline and diesel fuel demand to 15 percent below 2003 demand levels by 2020 and maintain that level for the foreseeable future; the Governor and

Legislature work to establish national fuel economy standards that double the fuel efficiency of new cars, light trucks, and sport utility vehicles (SUVs); and increase the use of non- petroleum fuels to 20 percent of on-road fuel consumption by 2020 and 30 percent by 2030.

- Assembly Bill 1493 (Pavley)

California Assembly Bill 1493 (Pavley) enacted on July 22, 2002, required CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. Regulations adopted by CARB would apply to 2009 and later model year vehicles. CARB estimated that the regulation would reduce climate change emissions from light duty passenger vehicles by an estimated 18 percent in 2020 and by 27 percent in 2030 (AEP 2007). In 2005, the CARB requested a waiver from EPA to enforce the regulation, as required under the CAA. Despite the fact that no waiver had ever been denied over a 40-year period, the then Administrator of the EPA sent Governor Schwarzenegger a letter in December 2007, indicating he had denied the waiver. On March 6, 2008, the waiver denial was formally issued in the *Federal Register*. Governor Schwarzenegger and several other states immediately filed suit against the federal government to reverse that decision. On January 21, 2009, CARB requested that EPA reconsider denial of the waiver. EPA scheduled a re-hearing on March 5, 2009. On June 30, 2009, EPA granted a waiver of CAA preemption to California for its GHG emission standards for motor vehicles beginning with the 2009 model year.

- Executive Order S-3-05

Governor Schwarzenegger established Executive Order S-3-05 in 2005. This Executive Order set forth a series of target dates by which statewide emissions of GHGs would be progressively reduced, as follows:

- By 2010, reduce GHG emissions to 2000 levels;
- By 2020, reduce GHG emissions to 1990 levels; and
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

The executive order directed the Secretary of the California Environmental Protection Agency (Cal/EPA) to coordinate a multi-agency effort to reduce GHG emissions to the target levels. The Secretary will also submit biannual reports to the Governor and Legislature describing the progress made toward the emissions targets, the impacts of global climate change on California's resources, and mitigation and adaptation plans to combat these impacts. To comply with the Executive Order, the Cal/EPA Secretary created the Climate Action Team (CAT), made up of members from various State agencies and commissions. The team released its first report in March 2006, which proposed to achieve the targets by building on the voluntary actions of California businesses, local governments, and communities and through State incentive and regulatory programs.

- Assembly Bill 32 (California Global Warming Solutions Act of 2006)

California passed the California Global Warming Solutions Act of 2006 (AB 32; California Health and Safety Code Division 25.5, Sections 38500 - 38599), which established regular reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and establishes a cap on statewide GHG emissions.

AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. This reduction will be accomplished by enforcing a statewide cap on GHG emissions that will be phased in starting in 2012. To effectively implement the cap, AB 32 directs CARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles. However, AB 32 also includes language stating that if the AB 1493 regulations cannot be implemented, then CARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

AB 32 requires CARB adopt a quantified cap on GHG emissions representing 1990 emissions levels and disclose how it arrived at the cap; institute a schedule to meet the emissions cap; and develop tracking, reporting, and enforcement mechanisms to ensure that the State reduces GHG emissions sufficient to meet the cap. AB 32 also includes guidance on instituting emissions reductions in an economically efficient manner, along with conditions to ensure that businesses and consumers are not unfairly affected by the reductions. Using these criteria to reduce statewide GHG emissions to 1990 levels by 2020 would represent an approximate 25 to 30 percent reduction in current emissions levels. However, CARB has discretionary authority to seek greater reductions in more significant and growing GHG sectors, such as transportation, as compared to other sectors that are not anticipated to significantly increase emissions. Under AB 32, CARB must adopt regulations by January 1, 2011 to achieve reductions in GHGs to meet the 1990 emission cap by 2020.

- Assembly Bill 1007

Assembly Bill 1007, (Pavley, Chapter 371, Statutes of 2005) directed the CEC to prepare a plan to increase the use of alternative fuels in California. As a result, the CEC prepared the State Alternative Fuels Plan in consultation with the state, federal, and local agencies. The plan presents strategies and actions California must take to increase the use of alternative non-petroleum fuels in a manner that minimizes costs to California and maximizes the economic benefits of in-state production. The Plan assessed various alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuels use, reduce greenhouse gas emissions, and increase in-state production of biofuels without causing a significant degradation of public health and environmental quality.

- Bioenergy Action Plan – Executive Order #S-06-06

Executive Order #S-06-06 establishes targets for the use and production of biofuels and biopower and directs State agencies to work together to advance biomass programs in California while providing environmental protection and mitigation. The executive order establishes the following target to increase the production and use of bioenergy, including ethanol and biodiesel fuels made from renewable resources: produce a minimum of 20 percent of its biofuels within California by 2010, 40 percent by 2020, and 75 percent by 2050. The executive order also calls for the State to meet a target for use of biomass electricity.

- Executive Order S-1-07

  Executive Order S-1-07, which was signed by Governor Schwarzenegger in 2007, proclaims that the transportation sector is the main source of GHG emissions in California, generating more than 40 percent of statewide emissions. It establishes a goal to reduce the carbon intensity of transportation fuels sold in California by at least ten percent by 2020. This order also directs CARB to determine whether this Low Carbon Fuel Standard (LCFS) could be adopted as a discrete early-action measure to meet the mandates in AB 32. On April 23, 2009, CARB approved the proposed regulation to implement the LCFS. The LCFS will reduce GHG emissions from the transportation sector in California by about 16 MMT in 2020, and is designed to reduce California's dependence on petroleum, create a lasting market for clean transportation technology, as well as stimulate the production and use of alternative, low-carbon fuels in California. The LCFS is designed to provide a durable framework that uses market mechanisms to spur the steady introduction of lower carbon fuels. This framework establishes performance standards that fuel producers and importers must meet each year beginning in 2011. One standard is established for gasoline and the alternative fuels that can replace it. A second similar standard is set for diesel fuel and its replacements.

  The standards are "back-loaded"; meaning that more reductions are required in the last five years, than the first five years. This schedule allows for the development of advanced fuels that are lower in carbon than today's fuels and the market penetration of plug-in hybrid electric vehicles, battery electric vehicles, fuel cell vehicles, and flexible fuel vehicles. It is anticipated that compliance with the LCFS will be based on a combination of strategies involving lower carbon fuels and more efficient, advanced-technology vehicles.

- Climate Action Program at Caltrans

  The California Department of Transportation, Business, Transportation, and Housing Agency, prepared a Climate Action Program in response to new regulatory directives. The goal of the Climate Action Program is to promote clean and energy efficient transportation, and provide guidance for mainstreaming energy and climate change issues into business operations. The overall approach to lower fuel consumption and CO_2 from transportation is twofold: (1) reduce congestion and improve efficiency of transportation systems through smart land use, operational improvements, and Intelligent Transportation Systems; and (2) institutionalize energy efficiency and GHG emission reduction measures and technology into planning, project development, operations, and maintenance of transportation facilities, fleets, buildings, and equipment.

  The reasoning underlying the Climate Action Program is the conclusion that "the most effective approach to addressing GHG reduction, in the short-to-medium term, is strong technology policy and market mechanisms to encourage innovations. Rapid development and availability of alternative fuels and vehicles, increased efficiency in new cars and trucks (light and heavy duty), and super clean fuels are the most direct approach to reducing GHG emissions from motor vehicles (emission performance standards and fuel or carbon performance standards)."

- Senate Bill 97

SB 97, signed August 2007 (Chapter 185, Statutes of 2007; PRC Sections 21083.05 and 21097), acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA. This bill directs the Governor's Office of Planning and Research (OPR), to prepare, develop, and transmit to CARB guidelines for the feasible mitigation of GHG emissions (or the effects of GHG emissions), as required by CEQA, by July 1, 2009. The Resources Agency was required to certify and adopt those guidelines by January 1, 2010. SB 97 also removed, both retroactively and prospectively, the legitimacy of litigation alleging inadequate CEQA analysis of effects of GHG emissions in the environmental review of projects funded by the Highway Safety, Traffic Reduction, Air Quality and Port Security Bond Act of 2006 or the Disaster Preparedness and Flood Protection Bond Act of 2006 (Proposition 1B or 1E). This provision was repealed by operation of law on January 1, 2010; at that time, any such projects that remain unapproved would no longer be protected against litigation claims of failure to adequately address climate change issues. In the future, this bill will only protect a handful of public agencies from CEQA challenges on certain types of projects, and only for a few years' time.

As set forth more fully below, in June 2008, OPR published a technical advisory recommending that CEQA lead agencies make a good-faith effort to estimate the quantity of GHG emissions that would be generated by a proposed project. Specifically, based on available information, CEQA lead agencies should estimate the emissions associated with project-related vehicular traffic, energy consumption, water usage, and construction activities to determine whether project-level or cumulative impacts could occur, and should mitigate the impacts where feasible (Governor's Office of Planning and Research, 2008*)*. OPR requested CARB technical staff to recommend a method for setting CEQA thresholds of significance, as described in Section 15064.7 of *CEQA Guidelines*, which will encourage consistency and uniformity in the CEQA analysis of GHG emissions throughout the State.

Senate Bill 97 (Chapter 185, 2007) required the Governor's Office of Planning and Research (OPR) to develop recommended amendments to the State CEQA Guidelines for addressing GHG emissions. OPR prepared its recommended amendments to the State CEQA Guidelines to provide guidance to public agencies regarding the analysis and mitigation of greenhouse gas emissions and the effects of GHG emissions in draft CEQA documents. The Amendments became effective on March 18, 2010.

- Senate Bill 375

SB 375, signed in September 2008 (Chapter 728, Statutes of 2008), aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a sustainable communities strategy (SCS) or alternative planning strategy (APS) that will prescribe land use allocation in that MPOs RTP. CARB, in consultation with MPOs, will provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets.

CARB is also charged with reviewing each MPO's SCS or APS for consistency with its assigned targets. If MPOs do not meet the GHG reduction targets, transportation projects may not be eligible for funding programmed after January 1, 2012.

This law also extends the minimum time period for the regional housing needs allocation cycle from five years to eight years for local governments located within an MPO that meets certain requirements. City or county land use policies (including general plans) are not required to be consistent with the RTP (and associated SCS or APS). However, new provisions of CEQA would incentivize (through streamlining and other provisions) qualified projects that are consistent with an approved SCS or APS, categorized as "transit priority projects."

- California Climate Action Registry General Reporting Protocol

The California Climate Action Registry (CCAR) was established in 2001 by SB 1771 and SB 527 (Chapter 1018, Statutes of 2000, and Chapter 769, Statutes of 2001, respectively) as a nonprofit voluntary registry for GHG emissions. The purpose of the CCAR is to help companies and organizations with operations in the State to establish GHG emissions baselines against which any future GHG emissions reduction requirements may be applied. CCAR has developed a general protocol and additional industry-specific protocols that provide guidance on how to inventory GHG emissions for participation in the registry.

This protocol provides the principles, approach, methodology, and procedures required for participation in CCAR. It is designed to support the complete, transparent, and accurate reporting of an organization's GHG emissions inventory in a fashion that minimizes the reporting burden and maximizes the benefits associated with understanding the connection between fossil fuel consumption, electricity use, and GHG emissions in a quantifiable manner. The most updated version of this protocol was prepared in April 2008. All cabinet-level State agencies and departments have joined the CCAR. Membership in the CCAR means that all members of the Governor's Cabinet will be reporting their GHG emissions on a yearly basis.

- California Code of Regulations Title 24

Although not originally intended to reduce GHG emissions, California Code of Regulations Title 24 Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. The GHG emission inventory was based on Title 24 standards as of October 2005; however, Title 24 has been updated as of 2008 and standards are set to be phased in summer 2009. Energy efficient buildings require less electricity, natural gas, and other fuels. Electricity production from fossil fuels and on-site fuel combustion (typically for water heating) results in GHG emissions. Therefore, increased energy efficiency results in decreased GHG emissions.

- CAPCOA January 2008 CEQA and Climate Change

In January 2008, the California Air Pollution Control Officers Association (CAPCOA) issued a "white paper" on evaluating GHG emissions under CEQA. The CAPCOA white paper strategies are not guidelines and

have not been adopted by any regulatory agency; rather, the paper is offered as a resource to assist lead agencies in considering climate change in environmental documents.

The CAPCOA white paper addresses what constitutes new emissions, how baseline emissions should be established, what should be considered cumulatively considerable under CEQA, what a business as usual (BAU) scenario means, and whether an analysis should include life-cycle emissions.

The CAPCOA white paper contains a Climate Change Significance Criteria Flow Chart that proposes a tiered approach to determining significance under CEQA. The flow chart would consider a proposed plan's impact to be less than significant if a General Plan for the project area exists that is in compliance with AB 32 (showing that GHG emissions for 2020 would be less than 1990 emissions for the plan area). The flow chart would consider a proposed Project's impact to be significant unless one of the following can be demonstrated:

- The project is exempt under SB 97;
- The project is on the "Green List" (Projects that are deemed a positive contribution to California efforts to reduce GHG emissions);
- A General Plan for the project area exists that is in compliance with AB 32; and/or
- GHG emissions are analyzed and mitigated to less-than-significant.

The CAPCOA white paper considers GHG impacts to be exclusively cumulative impacts.

- CARB Climate Change Proposed Scoping Plan

On December 11, 2008, CARB adopted its Scoping Plan, which functions as a roadmap of CARB's plans to achieve GHG reductions in California required by AB 32 through subsequently enacted regulations. CARB has estimated that the 1990 GHG emissions level was 427 MMT net CO_2e (CARB 2007b). CARB estimates that a reduction of 173 MMT net CO_2e emissions below Business As Usual (BAU) would be required by 2020 to meet the 1990 levels (CARB, 2007b). This amounts to a 15 percent reduction from today's levels, and a 30 percent reduction from projected BAU levels in 2020 (CARB, 2008a).

CARB's Scoping Plan calculates 2020 BAU emissions as those expected to occur in the absence of any GHG reduction measures. The 2020 BAU emissions estimate was derived by projecting emissions from a past baseline year using growth factors specific to each of the different economic sectors, i.e. transportation, electrical power, commercial and residential, industrial etc. CARB used three-year average emissions, by sector, for 2002-2004 to forecast emissions to 2020. At the time CARB's Scoping Plan process was initiated, 2004 was the most recent year for which actual data was available. The measures described in CARB's Scoping Plan are intended to reduce the projected 2020 BAU to 1990 levels, as required by AB 32. CARB's Scoping Plan also breaks down the amount of GHG emissions reductions CARB recommends for each emissions sector of the state's GHG inventory. CARB's Scoping Plan calls for the largest reductions in GHG emissions to be achieved by implementing the following measures and standards:

- Improved emissions standards for light-duty vehicles (estimated reductions of 31.7 MMT CO_2E);
- The LCFS (15.0 MMT CO_2E);

- Energy efficiency measures in buildings and appliances, and the widespread development of combined heat and power systems (26.3 MMT CO_2E); and
- A renewable portfolio standard for electricity production (21.3 MMT CO_2E). CARB has identified a GHG reduction target of 5 MMT (of the 174 MMT total) for local land use changes (Table 2 of CARB's Scoping Plan), by Implementation of Reduction Strategy T-3 regarding Regional Transportation-Related GHG Targets. Additional land use reductions may be achieved as SB 375 is implemented. CARB's Scoping Plan states that successful implementation of the plan relies on local governments' land use, planning, and urban growth decisions because local governments have primary authority to plan, zone, approve, and permit land development to accommodate population growth and the changing needs of their jurisdictions. CARB further acknowledges that decisions on how land is used will have large effects on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emission sectors. CARB's Scoping Plan does not include any direct discussion about GHG emissions generated by construction activity. The measures approved by the Board are being developed to be in place by 2012. CARB's Scoping Plan expands the list of nine Discrete Early Action Measures to a list of 39 Recommended Actions contained in Appendices C and E of CARB's Scoping Plan.

- OPR June 2008 Technical Advisory on CEQA and Climate Change

SB 97 directs the Governor's Office of Planning and Research (OPR) to develop guidelines for the mitigation of GHG emissions or the effects of GHG emissions under CEQA. OPR is required to prepare and transmit these guidelines by July 1, 2009 for certification and adoption by January 1, 2010. In the interim, a June 2008 Technical Advisory provides informal guidance for public agencies as they address the issue of climate change in their CEQA documents. The June 2008 Technical Advisory offers recommendations for identifying GHG emissions, determining significance under CEQA, and mitigating impacts.

The Advisory states that lead agencies under CEQA should develop their own approach to performing a climate change analysis for projects that generate GHG emissions. It also states that the lead agency should assess whether project emissions are individually or cumulatively significant, and implement strategies to avoid, reduce, or otherwise mitigate the impacts of those emissions when impacts are potentially significant. However, CARB's subsequently released draft thresholds acknowledge that the GHG analysis should be on a cumulative basis as GHG is a global phenomenon.

Regional agencies can attempt to reduce GHG emissions through their planning processes. For example, regional transportation planning agencies can adopt plans and programs that address congestion relief and reduce VMT.

In April 2009, OPR published its proposed revisions to CEQA to address GHG emissions. The amendments to CEQA indicate the following:

- Climate action plans and other greenhouse gas reduction plans can be used to determine whether a project has significant impacts, based upon its compliance with the plan;
- Local governments are encouraged to quantify the greenhouse gas emissions of proposed projects, noting that they have the freedom to select the models and methodologies that best meet their needs

and circumstances. The section also recommends consideration of several qualitative factors that may be used in the determination of significance, such as the extent to which the given project complies with state, regional, or local GHG reduction plans and policies. OPR does not set or dictate specific thresholds of significance. Consistent with existing CEQA Guidelines, OPR encourages local governments to develop and publish their own thresholds of significance for GHG impacts assessment;

- When creating their own thresholds of significance, local governments may consider the thresholds of significance adopted or recommended by other public agencies, or recommended by experts;
- New amendments include guidelines for determining methods to mitigate the effects of GHG emissions in Appendix F of the CEQA Guidelines;
- OPR is clear to state that "to qualify as mitigation, specific measures from an existing plan must be identified and incorporated into the project; general compliance with a plan, by itself, is not mitigation;" and
- OPR emphasizes the advantages of analyzing GHG impacts on an institutional, programmatic level. OPR therefore approves tiering of environmental analyses and highlights some benefits of such an approach.

- OPR January 8, 2009 Preliminary Draft CEQA Guideline Amendments for GHG Emissions

In January 2009, OPR released preliminary proposed amendments to the *CEQA Guidelines* regarding GHG emissions. A significance threshold is not included in the draft and the guidelines afford the customary deference provided to lead agencies in their analysis and methodologies. The introductory preface to the amendments recommends that CARB set state-wide thresholds of significance. CARB released draft thresholds, as referenced below. OPR emphasized the necessity of having a consistent threshold available to analyze projects, and the analyses should be performed based on the best available information. For example, if a lead agency determines that GHGs may be generated by a proposed Project, the agency is responsible for quantifying estimated GHG emissions by type and source. The preliminary draft guidelines provide the following recommendations for determining the significance of GHG emissions under draft Section 15064.4:

a. The determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency consistent with the provisions in section 15064. A lead agency should make a good-faith effort, based on available information, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project. A lead agency shall have discretion to determine, in the context of a particular project, whether to:

    1. Use a model or methodology to quantify GHG emissions resulting from a project, and which model or methodology to use. The lead agency has discretion to select the model it considers most appropriate provided it supports its decision with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use; or

    2. Rely on a qualitative analysis or performance based standards.

b. A lead agency may consider the following when assessing the significance of impacts from greenhouse gas emissions on the environment:

1. The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting;

2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; and

3. The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. Such regulations or requirements must be adopted by the relevant public agency through a public review process and must include specific requirements that reduce or mitigate the project's incremental contribution of GHG emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

The proposed amendments reiterate that the analysis of GHG impacts is cumulative. Section 15130 (f) provides that an EIR shall analyze GHG emissions resulting from a proposed project when the incremental contribution of those emissions may be cumulatively considerable. On April 13, 2009, OPR submitted its proposed amendments to the State *CEQA Guidelines* for GHG emissions to the Secretary for Natural Resources, as required by Senate Bill 97 (Chapter 185, 2007). The Natural Resources Agency will conduct formal rulemaking prior to certifying and adopting the amendments, as required by Senate Bill 97. On December 30, 2009, the Resources Agency approved the new GHG guidelines as amendments to the existing CEQA guidelines. The revised guidelines took effect on March 18, 2010.

- CARB Preliminary Draft Staff Proposal, October 2008

Separate from CARB's Scoping Plan approved in December 2008, CARB issued a Staff Proposal in October 2008, as its first step toward developing recommended statewide interim thresholds of significance for GHGs that may be adopted by local agencies for their own use. The proposal does not attempt to address every type of project that may be subject to CEQA, but instead focuses on common project types that, collectively, are responsible for substantial GHG emissions – specifically, industrial, residential, and commercial projects. CARB is developing thresholds in these sectors to advance climate objectives, streamline project review, and encourage consistency and uniformity in the CEQA analysis of GHG emissions throughout the State. These draft thresholds are under revision in response to voluminous comments received. Finalized thresholds are expected in 2010.

CARB staff's objective in this proposal is to develop a threshold of significance that would require the vast majority (approximately 90 percent statewide) of GHG emissions from new industrial projects to be subject to CEQA's requirement to impose feasible mitigation. CARB believes this can be accomplished with a threshold that allows small projects to be considered insignificant. CARB staff used existing data for the industrial sector to derive a proposed hybrid threshold. The threshold consists of a quantitative threshold of 7,000 metric tons of CO_2E per year (MT/year CO_2E) for operational emissions (excluding transportation), and performance standards for construction and transportation emissions. These performance standards have not yet been developed.

Regional

- San Joaquin Valley Air Pollution Control District

  To assist lead agencies, project proponents, permit applicants, and interested parties in assessing and reducing the impacts of project specific greenhouse gas emissions (GHG) on global climate change, the SJVAPCD has adopted the guidance: *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA* and the policy: *District Policy – Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency*. The guidance and policy rely on the use of performance based standards, otherwise known as Best Performance Standards (BPS) to assess significance of project specific greenhouse gas emissions on global climate change during the environmental review process, as required by CEQA. Use of BPS is a method of streamlining the CEQA process of determining significance and is not a required emission reduction measure. Projects implementing BPS would be determined to have a less than cumulatively significant impact. Otherwise, demonstration of a 29 percent reduction in GHG emissions, from business-as-usual, is required to determine that a project would have a less than cumulatively significant impact. The guidance does not limit a lead agency's authority in establishing its own process and guidance for determining significance of project related impacts on global climate change.

Environmental Impacts, Mitigation Measures and Significance After Mitigation

Methodology

Climate change is a significant global cumulative impact that could also have a substantial effect on the natural environment of California and within Kern County. The potential contribution of the 2011 RTP and the 2011 RTP Amendment No. 1 to this cumulative impact is discussed below.

State action on climate change is mandated by AB 32. Kern COG, along with other regional planning agencies throughout the State, will be monitoring the progress of State agencies in developing approaches to address GHG emissions. As agreed-upon approaches for project-level CEQA analysis and for transportation planning are established, Kern COG expects that climate change will be a key environmental consideration in future regional transportation planning. Both Kern COG and responsible agencies implementing projects outlined in the 2011 RTP and the 2011 RTP Amendment No.1 will be required to adhere to any future applicable mandatory regulations regarding global warming resulting from the passage of AB 32, but the exact character of such future implementing strategies is not known at this time.

Criteria for Significance

As with any environmental impact, lead agencies must determine what constitutes a significant impact. In the absence of regulatory standards for GHG emissions or other scientific data to clearly define what constitutes a "significant impact", individual lead agencies may undertake a project-by-project analysis, consistent with available guidance and current CEQA practice. The potential effects of a project may be individually limited but cumulatively significant. Lead agencies should not dismiss a proposed project's direct and/or indirect climate

change impacts without careful consideration, supported by substantial evidence. Although climate change is ultimately a cumulative impact, not every individual project that emits GHGs must necessarily be found to contribute to a significant cumulative impact on the environment. CEQA authorizes reliance on previously approved plans and mitigation programs that have adequately analyzed and mitigated GHG emissions to a less than significant level as a means to avoid or substantially reduce the cumulative impact of a project, encourages reliance on other EIRs that discuss GHGs, and tiering from them. The preliminary draft amendments OPR issued included an introductory letter in which OPR indicated that it intends to rely on CARB to recommend a method for setting significance thresholds.

As described previously, the State Legislature and the global scientific community have found that global climate change poses significant adverse effects to the environment of California and the entire world. To mitigate these adverse effects the State Legislature enacted AB 32, which requires statewide GHG reductions to 1990 levels by 2020.

AB 32 and S-3-05 target the reduction of statewide emissions. It should be made clear that AB 32 and S-3-05 do not specify that the emissions reductions should be achieved through uniform reduction by geographic location or by emission source characteristics. Consistency with AB 32 will be used to assess significance with respect to greenhouse gas (GHG) emissions.

Although the MPOs do not have land use authority to implement more compact and energy efficient land use, or limit growth, the eight San Joaquin Valley Councils of Governments or County Transportation Commissions are working on a significant project called the San Joaquin Valley Blueprint. The process has led to a preferred land use scenario separate from the local government general plan process. The agencies are now working collectively on a Blueprint Implementation Plan including a ToolKit that will be available to local agencies throughout the Valley as they review development projects and prepare land use plans and policies.

The SJVAPCD provides a methodology for addressing GHG Emission for Stationary Sources and for Development projects in *Addressing Greenhouse Gas Emissions under the California Environmental Quality Act*. The methodology relies on the use of performance based standards that would be applicable to projects that result in increased GHG emissions. The SJVAPCD notes that the use of performance based standards is not a method of mitigating emissions, rather it is a method of determining significance of project specific GHG emission impacts using established specifications or project design elements: Best Performance Standards (BPS).

In the SJVAPCD's *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA* it states that projects implementing BPS in accordance with the guidance would be determined to have a less than significant individual and cumulative impact on global climate change and would not require project specific quantification of GHG emissions. Projects exempt from the requirements of CEQA, and projects complying with an approved GHG emission reduction plan or mitigation program would also be determined to have a less than significant individual or cumulative impact. Projects not implementing BPS would require quantification of project specific GHG emissions.

To be determined to have a less than significant individual and cumulative impact on global climate changes, such projects must be determined to have reduced or mitigated GHG emissions by 29%, consistent with GHG emission reduction targets established in ARB's AB 32 Scoping Plan. Furthermore, quantification of GHG emissions would be expected for all projects for which the lead agency has determined that an EIR is required, regardless of whether the project incorporates BPSs.

While this methodology is deemed appropriate for project-level analysis and could apply to the project-level analysis for individual RTP projects as they are designed and reviewed, it is not a methodology for program-level analysis such as done with the 2011 RTP SEIR Addendum. Instead, the analysis used for the 2011 RTP SEIR Addendum quantifies GHG emissions associated with the 2011 RTP Amendment No.1. The 2011 SEIR Addendum GHG analysis does not look at GHG emission sources that are non-transportation related (i.e. industrial, commercial, etc.). Neither CEQA nor the CEQA Guidelines mention or provide any methodology for analysis of "greenhouse gases," including CO_2, nor do they provide any significance thresholds. However, the air quality model used to predict emissions rates of the criteria pollutants (EMFAC) is capable of modeling the emissions of CO_2, and Kern COG analyzed CO_2 emissions and fuel-consumption impacts from on-road travel resulting from the proposed RTP Amendment No.1. The county-wide levels of GHGs associated with on-road vehicle travel are estimated based on the population estimates adopted by Kern COG in 2009. These population estimates were developed considering the economic downturn.

Impact 3.5.1 - Increased Transportation GHG Emissions May Cause Climate Change

The ultimate sources of increased transportation emissions in Kern County are population and employment growth, which will increase with or without projects referenced in the 2011 RTP. Kern COG does not implement land use policy in Kern County; rather, this is under the jurisdiction of the County and the various cities. Decisions about the place, pace, and scale of growth and development are reflected in the general plans and project approvals adopted by the local agencies. The 2011 RTP is designed to complement, rather than change, the plans adopted by the local agencies. Thus, the ultimate effect of the 2011 RTP on transportation emissions is not to increase the amount of travel per se, but rather to influence where and how travel occurs within and through the County.

Kern COG's ability to address and mitigate climate change impacts is limited primarily to policy and funding decisions related to planned roadway and alternative transportation improvements. As described above, the combustion of fossil fuels during vehicle operations is one of the primary sources of GHG emissions in California. GHG emissions also result from the carbon dioxide, methane, and nitrous oxide that are released during the combustion of gasoline and diesel fuel in construction equipment, vehicles, buses, trucks, and trains; and the use of natural gas to power transit buses and other vehicles. As discussed previously, historical and current global GHG emissions are known by the State and the global scientific community to be causing global climate change, and future increases in GHG emissions associated with the proposed RTP Amendment No.1 could exacerbate climate change and contribute to the significant adverse environmental effects described previously. Furthermore, increased GHG emissions associated with the proposed RTP Amendment No.1 could impact implementation of the State's mandatory requirement under AB 32 to reduce statewide GHG emissions to 1990 levels by 2020.

CO2 Emissions

Emissions associated with the 2011 RTP Amendment No.1 can be divided into two categories: passenger transportation associated with light duty trucks and automobiles (LDTA), and goods movement by truck. Consistency with AB 32 will be evaluated by reviewing the Scoping Plan[2] and evaluating whether the actions in the 2011 RTP and the 2011 RTP Amendment No. 1 will in any way impede implementation of the Scoping Plan. This will be done individually for the LDTA category and the Goods Movement category. The Goods Movement category within the 2011 RTP and the 2011 RTP Amendment No. 1 comprises emissions associated with goods movement in trucks. The Goods Movement category in the Scoping Plan also includes transportation of goods by vessels, but those categories are not impacted by the 2011 RTP or Amendment No. 1.

- Light Duty Trucks and Autos: For LDTA, there are three measures listed in the Scoping Plan. They are:
  1. Low Carbon Fuel Standard (LCFS);
  2. Pavley Greenhouse Gas Vehicle Standards; and
  3. Regional Transportation-Related GHG Targets.

  The 2011 RTP and the 2011 RTP Amendment No.1 will not impact the implementation of the LCFS and the Pavley fuel efficiency standards. The Regional Transportation-Related GHG targets are implemented by SB 375, which establishes mechanisms for the development of regional targets for reducing LDTA GHG emissions. Through the SB 375 process, regions will work to integrate development patterns and the transportation network to achieve the reduction of greenhouse gas emissions while meeting housing needs and other regional planning objectives.

  SB 375 requires CARB to develop, in consultation with MPOs, passenger vehicle greenhouse gas emissions reduction targets for 2020 and 2035 by September 30, 2010. The first RTP Update that will be subject to SB 375 for Kern COG is the 2014 RTP. However, Kern COG has evaluated the 2011 RTP Amendment No.1 for consistency with the SB 375 draft targets for the purposes of evaluating significance for GHG emissions. Consistent with the draft SB 375 targets published by CARB, and CEQA practice, the baseline is intended to be representative of today's conditions. Accordingly, 2011 was chosen as a baseline year. SB 375 targets for each region were published by the CARB on June 30th, 2010. The Draft GHG target for MPOs within the San Joaquin Valley were set to between 1% and 7% of the GHG emissions considering emission reductions expected from Pavley GHG Vehicle Standards and the LCFS. CO_2 emissions were projected for 2011, 2020, and 2035 using EMFAC 2007 Version 2.3 model.

  As shown in Table 40, the GHG emissions for 2020 and 2035 are between 2.3% (2020) and 9.2% (2035) above the GHG emissions level of 2005, exclusive of the savings expected from the Pavley GHG Vehicle Standards and the LCFS. Table 40 also shows that VMT increases on a per capita basis by 4.5% in 2020 and 10.5% in 2035. The increase in 2020 and 2035 is directly correlated to the population growth in the region and increased VMT traveling below 25 mph (the speed range at which GHG emissions production is the highest from light duty autos and trucks). In 2020 and 2035 population growth outpaces transportation improvements resulting in an overall increase in GHG emissions on a per capita basis relative to 2011 in 2020 and 2035 respectively. Year 2020 and 2035 emissions reflect an increase in per capita emissions from 2011 and therefore do not demonstrate consistency with AB 32.

[2] http://www.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf

TABLE 40
Future VMT and GHG Emissions

	Pounds per Capita GHG Emissions	% Change from 2011	VMT Per Capita	% Change from 2011
2011	21.7	--	28.7	--
2020	22.2	2.3%	30.0	4.5%
2025	22.6	4.1%	30.5	6.3%
2035	23.7	9.2%	31.7	10.5%

Source: Kern COG, EMFAC 2007 Version 2.3 model.

- Goods Movement: The Goods Movement category includes the following measures in the Scoping Plan:
  1. Ship Electrification at Ports;
  2. System-Wide Efficiency Improvements;
  3. Heavy-Duty Vehicle Greenhouse Gas Emission Reduction (Aerodynamic Efficiency); and
  4. Medium- and Heavy-Duty Vehicle Hybridization.

  Medium Duty and Heavy Duty on road goods movement emissions were quantified using the Kern COG travel demand model and EMFAC 2007. GHG emissions results for medium and heavy duty trucks can be found in Table 41.

TABLE 41
GHG Emissions (Goods Movement)
(Tons/Day)

	Medium Duty Trucks	Heavy Duty trucks	Total Emissions
2011	1,710	9,500	11,210
2020	2,040	12,420	14,460
2025	2,310	13,420	15,730
2035	2,940	15,320	18,260

Sources: Kern COG, Trimms 2.0 (2010), EMFAC 2007 Version 2.3 model.

Although GHG emissions appear to increase from medium duty and heavy duty trucks, these emissions calculations do not reflect emissions reductions attributable to the Goods Movement Emissions Reduction Plan or non-regulatory reductions achieved from the implementation of the Goods Movement portion of Proposition 1B (2006). While non-regulatory measures and measures not approved at the time of the

release of EMFAC 2007 cannot be accurately reflected in the emissions model, implementation of the Goods Movement Emissions Reduction Plan and the 2007 State Implementation Plan will lead to emissions reductions consistent with the AB32 scoping plan for the goods movement sector. The 2011 RTP Amendment No.1 does not hinder the implementation of these plans, and therefore, emissions reductions are anticipated to be consistent with the goals of AB 32.

It is also important to note that emissions estimates contained within ARB's Goods Movement Emissions Reductions Plan from the goods movement sectors continue to grow in the future. As indicated in the Goods Movement Reductions Plan, regulatory actions are, and will remain the framework for emissions reductions. The 2011 RTP Amendment No.1 does not interfere with the implementation of ARB regulatory actions.

The Goods Movement Emissions Reduction Plan (required by Proposition 1B) and the 2007 State Implementation Plan contain numerous measures designed to reduce the public health impact of goods movement in California. Currently the SJVAPCD has been awarded Prop 1B funding for diesel engine retrofits. Emissions reductions resulting from these projects are outside the scope of the RTP Amendment No.1 and therefore have not been quantified. Significant reductions however, are not expected.

- Energy Consumption

Vehicle fuel consumption was projected from a baseline year of 2011 through the RTP build out year of 2035 using EMFAC 2007 Version 2.3 model. Table 42 quantifies the projected vehicle fuel consumption in gallons per day using EMFAC data. The total fuel consumption is projected to increase from 2,024,240 gallons in 2011 to 3,328,090 gallons in 2035, representing an increase of 55 percent over 30 years. The largest increase is projected in gasoline fuel with a 68 percent increase over 30 years, while diesel consumption is projected to decrease by 61 percent during the same time. It should be noted that the fuel consumption estimate is an overestimate, as "Pavely and Low Carbon Fuels" will have an impact on fleet efficiency.

TABLE 42
Kern County Vehicle Fuel Consumption (2011 through 2035)

	2011	2020	2025	2035
Gasoline (gallons)	1,069,400	1,278,320	1,424,300	1,793,940
Diesel (gallons)	954,840	1,230,750	1,333,430	1,534,150
Total Fuel (gal/day)	2,024,240	2,509,070	2,757,730	3,328,090
Total Fuel per capita (gal/day)	2.350	2.482	2.496	2.519

Sources: Kern COG, EMFAC 2007 Version 2.3 (2011).

The fuel consumption outputs reflect an increasing trend of fuel consumption per capita. This analysis shows that even with implementation of the various multi-modal improvements under the 2011 RTP and the 2011

RTP Amendment No. 1, including bike/pedestrian facilities, transit infrastructure/service, etc., VMT and fuel consumption will increase. Not reflected in the emission outputs is the potential for GHG benefits as a result of the Kern COG's Smart Growth incentives and as a result of a SCS that Kern COG will prepare in accordance with SB 375, with the next RTP update.

- Population Growth

Between 2000 and 2010, Kern County and its incorporated cities have experienced a wide range of development and population growth. Over the next 25 years, the Kern region will continue to grow rapidly. Kern COG projects a total population of 1,367,600 for Kern County by 2035. Table 43 presents the population projections from 1970 through 2035.

TABLE 43

Population of Kern County
1970 - 2035

Date	Kern County	California	County Share of California Population
July 1970	330,000 [1]	19,053,100 [1]	1.7%
July 1980	403,089 [1]	23,667,900 [1]	1.7%
July 1990	549,535 [1]	29,760,000 [1]	1.8%
July 2000	663,510 [1]	33,871,648 [1]	2.0%
July 2005	765,760 [2]	36,899,392 [2]	2.1%
July 2010	844,642 [2]	39,135,676 [2]	2.2%
July 2015	938,042 [3]	41,560,669 [2]	2.3%
July 2020	1,040,449 [3]	44,135,923 [2]	2.4%
July 2025	1,148,731 [3]	46,618,582 [2]	2.5%
July 2030	1,256,152 [3]	49,240,891 [2]	2.6%
July 2035	1,367,600 [3]	51,692,474 [2]	2.6%

1 U.S. Bureau of the Census
2 State of California Department of Finance
3 Based on California Department of Transportation Long-Term Forecasts

GHG emissions associated with implementation of the proposed RTP Amendment No.1 are primarily related to a projected increase in Countywide VMT as a result of projected growth in the unincorporated areas of Kern County and the incorporated cities. As described previously, Kern COG does not have land use authority within the County or the incorporated cities. Therefore, Kern COG's ability to mitigate for climate change impacts in this SEIR Addendum and the 2011 RTP Amendment No.1 is largely limited to Smart Growth Incentives, a focus on the SCS for the 2014 RTP Update, and improvements in alternative modes of transportation that may result in decreases in VMT per capita throughout the County.

- Greenhouse Gas Reduction

  Kern COG has used the best available information to determine whether the proposed RTP Amendment No.1 is consistent with the State's achievement of the AB 32 GHG emission reductions. In light of the uncertainty in the regulatory and technological environment, the 2011 RTP Amendment No.1 incorporates all feasible mitigation measures, which are identified below, to reduce the impacts of the proposed project on global climate change.

  This SEIR Addendum also includes a requirement that RTP Amendment No.1 projects incorporate the SJVAPCD's Best Performance Standards for reducing GHG. The 2011 RTP Amendment No.1 has also incorporated numerous policies, action items and funding priorities to develop and improve alternative modes of transportation throughout the County and the incorporated cities in Kern County.

  The measures included in the 2011 RTP Amendment No.1 are consistent with the GHG mitigation approaches outlined by the California Attorney General's Office in the May 21, 2008 report titled: *The California Environmental Quality Act, Addressing Global Warming Impacts at the Local Agency Level: Global Warming Measures.* The mitigation measures outlined below, and the policies and action items included in the 2011 RTP Amendment No.1 are also consistent with the May 29, 2008 Addendum to the 2007 Regional Transportation Guidelines prepared by the California Transportation Commission: *Addressing Climate Change and Greenhouse Gas Emissions During the RTP Process.*

Impact 3.5.2 - Cumulative GHG Emission Impact

It is possible that local transportation GHG emissions within Kern County, when combined with emissions throughout California and the world, might contribute to climate change. Based upon analysis conducted by the IPCC, climate change is a significant cumulative impact, given the ramifications for air quality, climate, public health, water resources, flooding, sea level, agricultural productivity, and biological resources, among other potential effects. However, no agreed-upon methodology is currently available under CEQA to adequately identify when project-level GHG emissions contribute considerably to this significant cumulative impact.

Also, the ultimate sources of increased transportation emissions in Kern County are population and employment growth, which will increase with or without projects included in the 2011 RTP Amendment No.1. Kern COG does not implement land use policy in Kern County; rather, this is under the jurisdiction of the County and the various cities. As such, decisions about the place, pace, and scale of growth and development are reflected in local agency general plans and project approvals approved by those agencies. The 2011 RTP Amendment No.1 is designed to complement, rather than change the plans adopted at the County and city levels. Thus, the ultimate effect of the 2011 RTP Amendment No.1 on transportation emissions is not to increase the amount of travel per se, but rather to influence where and how travel occurs within the County.

- Kern County Regional Blueprint Process

  Kern COG and the other seven counties in the San Joaquin Valley have developed individual Blueprints for their counties and have also completed a coordinated effort to develop the San Joaquin Valley Blueprint. All eight counties are located in the same Air Basin (San Joaquin Valley Air Basin) and received the grant for

Blueprint development from the State of California. The Blueprint programs in California are designed to address the three "E"s of Regional Blueprint Planning; that is, Energy Efficiency, the Environment, and Economic Development. The Kern County Regional Blueprint identifies a preferred land use scenario and transportation system for Kern County considering the application of alternative growth strategies. The Plan also identifies a vision, values, goals, objectives, and implementing strategies that can be planned by Kern COG and implemented by local agencies within the County to reduce vehicle trips, vehicle miles traveled (VMT), and support increased walkability, passenger rail, public transit systems, and bicycling.

The primary purpose of Kern County Regional Blueprint is to establish a coordinated long-range (year 2050) regional vision between transportation, land use, and the environment from an overall quality of life perspective.

As a vision, the Blueprint recognizes that economic, environmental, and social issues are interdependent and only integrated approaches will effect needed changes. The location of jobs, housing, and commerce affects the transportation system, the nature of the transportation system affects air quality, and air quality affects health outcomes.

Below are the three key products developed during the Blueprint process:

Guiding Principles: The San Joaquin Valley Blueprint Smart Growth Principles were developed based, primarily, on citizen-identified visions, values, and aspirations for Kern County and other counties throughout the Valley from the Phase I workshops. In turn, the Blueprint Smart Growth Principles provided the foundation upon which the Phase II Blueprint Vision choices were built.

The adopted 12 Smart Growth Principles are:

1. Create a range of housing opportunities and choices;
2. Create walkable neighborhoods;
3. Encourage community and stakeholder collaboration;
4. Foster distinctive, attractive communities with a strong sense of place;
5. Make development decisions predictable, fair, and cost-effective;
6. Mix land uses;
7. Preserve open space, farmland, natural beauty, and critical environmental areas;
8. Provide a variety of transportation choices;
9. Strengthen and direct development towards existing communities;
10. Take advantage of compact building design;
11. Enhance the economic vitality of the region; and
12. Support actions that encourage environmental resource management.

Preferred 2050 Regional Blueprint Scenario

Based on public input, Kern COG developed a vision statement, values, and guiding principles to guide the direction of the COG Blueprint. The Kern COG Blueprint envisions maintaining unique, livable communities, protecting the environment, building the economy, expanding mobility, preparing youth for the future, preserving health and safety, enhancing parks and recreation, and expanding coordinated planning. Kern

COG developed guiding principles to: conserve energy and natural resources; provide adequate and equitable services; enhance economic vitality; provide housing choices; use and improve existing community assets and infrastructure; encourage compact mixed-use development; provide transportation options; conserve land; and increase civic engagement.

While the Kern COG preferred growth scenario is a hybrid of the four growth scenarios presented during Phase 2, it most strongly reflects the "Moderate Change" growth scenario. A key feature of the preferred growth scenario is a focus on residential and employment centers. There are four types of residential centers: metropolitan, community, town, and village. Each residential center has its own population, commercial, residential, and employment characteristics. Each center also has a list of "future enhancements" that typify the type of development encouraged by the Kern COG Blueprint including: appropriately-scaled mixed-use buildings; walkable design; improved public transit; and tourism. The preferred growth scenario was compared to the status quo model using the eight performance measures. The results of this comparison showed a reduction of: 12 percent mega-watt hours of electricity used; 23 percent tons of CO2 emissions; 23 percent acre feet of water consumed; 4 percent average daily miles travelled for households; 31 percent acres of land converted to residential uses; 29 percent likelihood of obesity; and 30 percent money spent on infrastructure per housing unit. The preferred growth scenario also showed higher population densities (19 persons or 6 households per acre) than the status quo scenario (13 persons or 4 households per acre). The Kern Regional Blueprint Final Report includes a map depicting existing and potential employment centers, village centers, town centers, community centers and a metro center for the Kern region.

The next step is for the eight counties to coordinate development of a Blueprint Implementation Plan. The purpose of the Plan is to create a detailed document that will act as a guide to direct Blueprint implementation in the Valley. The San Joaquin Valley Blueprint Implementation Plan will detail current Valleywide goals and objectives, provide implementation actions to address the twelve Smart Growth Principles, and provide recommendations for the future. The intent of the Implementation Plan is to facilitate better tools for decision making by assisting local governments, tracking progress, and providing information to update local general plans.

- Existing Transit Systems in Kern County

Kern COG, working closely with local and regional bus and rail transit operators, continues to improve public transportation across Kern County. Funding for transit operations come primarily from Federal Transit Administration (FTA) grant programs, State Transportation Development Act (TDA), State Transit Assistance, and Measure "C".

Transit operations in Kern County include:

- Arvin Dial-A-Ride
- California City Dial-A-Ride
- Consolidated Transportation Service Agency (CTSA)
- Delano Area Fixed Route and Dial-A-Ride
- Golden Empire Transit (GET) and GET-A-Lift
- Kern Regional Transit (KRT) Fixed Route and Dial-A-Ride

- McFarland Dial-A-Ride
- Ridgecrest Dial-A-Ride
- Shafter Dial-A-Ride
- Taft Fixed Route and Dial-A-Ride
- Tehachapi Dial-A-Ride
- Wasco Dial-A-Ride
- Amtrak
- Greyhound
- Orange Belt Stagelines
- Transportes Intercalifornias

Public transit has been enhanced in the 2011 RTP compared to the prior RTP adopted in 2007). Such improvements will help mitigate expected increases in emissions resulting from increased population and employment and the impact of planned growth and development on the regional transportation system. The project improvements are expected to reduce VMT and vehicle trips, and as a result, GHG emissions.

Kern County has made significant progress in addressing many public transit needs throughout the Region. Kern COG's "Unmet Transit Needs" process has determined that transit services within the Kern County are meeting the reasonable transit needs of the public. These transit systems provide vital transportation services and enhancing the overall quality of life for residents throughout the County. Planned transit improvements over the 25 year timeframe of the RTP will be funded with approximately $580 million in projected revenues dedicated to future public transit improvements and services.

- Action Plans Intended to Reduce GHG

The RTP includes numerous action plans that are intended to promote the use of public transportation, rail, and non-motorized systems. Chapter 4, Action Element provides numerous tables that show the planned facilities under each of these alternative modes.

- SJVAPCD Best Performance Standards (BPS)

The SJVAPCD published *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA* in December 2009. This guidance document defines BPSs as the most effective achieved in-practice means of reducing or limiting GHG emissions from a GHG emissions source. The document includes BPSs for both traditional stationary source projects, and development projects. For stationary sources, BPSs includes equipment type, equipment design, and operational and maintenance practices for the identified service, operation, or emissions unit class and category. For development projects, BPS focuses on measures that improve energy efficiency and those that reduce vehicle miles traveled.

Mitigation Measures

The ultimate sources of increased transportation emissions in Kern County are population and employment growth, which will increase with or without projects referenced in the 2011 RTP Amendment No.1. Kern COG

does not implement land use policy in Kern County; rather, this is under the jurisdiction of the County and the various cities. Decisions about the place, pace, and scale of growth and development are reflected in the general plans and project approvals adopted by the local agencies. The 2011 RTP Amendment No.1 is designed to complement, rather than change, the plans adopted by the local agencies. Thus, the ultimate effect of the 2011 RTP Amendment No.1 on transportation emissions is not to increase the amount of travel per se, but rather to influence where and how travel occurs within and through the County.

A number of mitigation measures are included to address criteria emissions. Public transit has been enhanced in the 2011 RTP compared to the previous RTP (adopted in 2007). Such improvements will help mitigate expected increases in emissions resulting from increased population and employment and the impact of planned growth and development on the regional transportation system. The RTP also includes references to a number of studies. The Plan contains a number of projects and significant funding for various forms of transportation in addition to streets and highways. Kern COG is coordinating implementation of the San Joaquin Valley Blueprint with the other seven counties within the San Joaquin Valley. All eight counties are located in the same Air Basin (San Joaquin Valley Air Basin) and received the grant for Blueprint development from the State of California. The Blueprint programs in California are designed to address the three "E"s of Regional Blueprint Planning; that is, Energy Efficiency, the Environment, and Economic Development. The Kern County Blueprint identifies a vision, values, goals, objectives, and implementing strategies that can be planned by Kern COG and implemented by local agencies within the County to reduce vehicle trips, vehicle miles traveled (VMT), and support increased walkability, passenger rail, public transit systems, and bicycling.

Further, public transit over the next 20 years has been enhanced in the 2011 RTP over existing conditions and even when compared to the previous RTP (adopted in 2007). Such improvements will help mitigate expected increases in emissions resulting from increased population and employment and the impact of planned growth and development on the regional transportation system. Furthermore, the RTP includes references to a number of studies (some of which are described above). The Project improvements are expected to reduce VMT and vehicle trips and as a result, GHG emissions.

Kern COG cannot require that local agencies, Caltrans, the Air Districts or other agencies that use diesel-powered vehicles and equipment apply retrofit emission control devices, such as diesel oxidation catalysts and diesel particulate filters verified by CARB. Kern COG also cannot require that the same agencies use alternative forms of cement and asphalt that have lower GHG emissions. It is recommended however, that responsible agencies (local agencies, the Air District, Caltrans, and others) consider the implementation of such measures during individual project development and construction.

Both Kern COG and responsible agencies implementing projects outlined in the 2011 RTP Amendment No.1 will be required to adhere to any future applicable mandatory regulations regarding global warming resulting from the passage of AB 32 and AB 1493, but the exact character of such future implementing strategies is not known at this time. The following mitigation measures are intended to address regional and project-level impacts, as appropriate. For project-level impacts, the individual improvement project proponent or local jurisdiction will be responsible for ensuring adherence to the mitigation measures.

Through Implementation of the Regional Blueprint and coordination with implementation agencies, the following mitigation measures will result in reduced GHG emissions:

- Transportation

  - Work with member agencies to increase the number of Alternative Fuel Vehicles (AFV) in municipally owned vehicles;
  - Funding retrofit, repower or replacement of diesel vehicles with funding from applicable federal, state and local sources;
  - Encouragement of technology, such as electrification, to provide alternatives to operating the heating and air conditioning, refrigeration units while idling at distribution centers, warehouses, truck shops and other facilities where diesel trucks may reside overnight or for periods of several hours;
  - Subsidize carpool and vanpool programs that originate in Kern County;
  - Support efforts that further analyze GHG emission contributions from goods movement through transportation corridors, trucking and other relevant freight movement practices;
  - Support the use of grants, loans and incentives to assist local governments with the implementation of climate change response activities and GHG reduction strategies;
  - Support State legislation to provide incentive funds to local governments to develop and implement GHG reduction programs; and
  - Support efforts that will enable cities and counties to purchase new vehicles for local fleets that conform to state purchasing standards, are fuel efficient, low emission or use alternative fuels.

- Land Use (Blueprint)

  - Develop land use patterns, which encourage people to walk, bicycle, or use public transit for a significant number of their daily trips;
    - Use circulation elements of general plans to ensure that development is consistent and well connected by alternative transportation modes (as required by AB 1358 effective January 1, 2011);
    - Adopt transit-oriented or pedestrian-oriented design strategies and select areas appropriate for these designs in the general plan;
    - Support higher density development in proximity to commonly used services and transportation facilities, such as transit centers;
    - Promote a balance of housing, shopping, and other amenities on the urban fringe and outlying communities that service strategic rural employment areas such as military bases, prisons, wind/alternative energy areas, oil production/mining, agriculture/ranching, food processing, warehouse distribution/intermodal centers, travel centers, recreation areas, etc.;
    - Promote affordable housing affordable relative to average wages in the community to reduce commute distances;
    - Promote reduced travel by providing electric vehicles, bike, pedestrian and equestrian paths and park-and-ride lots;
    - Promote phasing of new housing developments that reduce the need for long distance commutes to work and retail centers while construction is underway;
    - Provide subsidies for alternative transportation such as vanpools and transit until such time as ridership is at a level that supports the minimum transit fare box subsidy requirements;

  - In transit-oriented areas, provide for express transit or bus rapid transit service and circulator feeder systems. Service should plan for direct access to the Bakersfield High Speed Rail station;
  - In transit-oriented areas, reduce parking requirements and provide car/vanpool parking areas;
  - In transit oriented areas include a transit pass/subsidy as part of the housing rental agreement, commercial rent agreement, employer benefit package, or monthly housing payment of new developments to ensure that express transit service has sufficient ridership to meet the minimum fare box requirement; and
  - Space walkable/bikeable transit centers a minimum of 1 – 3 miles apart to ensure that travel times compete with passenger vehicle travel times.
- In urban areas, develop in a compact, efficient form to reduce vehicle miles traveled and to improve the efficiency of alternatives to the automobile:
  - Use the control of public services to direct development to the most appropriate locations; and
  - Promote infill of vacant land and redevelopment sites;
- Encourage project site designs and subdivision street and lot designs that support walking, bicycling, and transit use:
  - Adopt design guidelines and standards promoting plans that encourage alternative transportation modes; and
  - Require certain sites to be created to allow convenient access by transit, bicycle, and walking;
- Accommodate projected population growth by identifying appropriate areas for urban and rural growth, economic development, and multi-modal transportation corridors that support smart growth principles;
- Promote 'downtowns' or 'urban centers' as the commercial, financial and social centers of communities. Promote higher density housing located adjacent to and within convenient walking distance to downtown, urban mixed use centers and/or transit corridors;
- Support and encourage policies and plans, which direct growth to well planned neighborhoods and communities;
- Encourage the design and development of an effective transportation system that integrates all modes into a seamless, reliable, cost-efficient system, including intelligent transportation solutions and high tech communication options;
- Support intermodal travel including park-and-ride, rideshare, bicycle, rail and transit programs;
- Support increased mass transit connectivity and accessibility;
- Promote reduction of vehicle miles traveled;
- Promote the achievement and maintenance of State and Federal standards for air quality;
- Encourage General Plan, Community Plan and Specific Plan updates to include air quality elements, Greenhouse Gas Emission Reduction Plans and mitigation measures that reduce air pollution and vehicle miles traveled from existing and new development;
- Encourage the reduction of air pollution impacts from new developments;
- Help establish baseline GHG emission rates for municipalities; and
- Promote landscaping strategies that will reduce GHG.

♦ Energy

- Promote the use of LED technology or comparable energy-efficient technology for traffic lights, rail signals and other features compatible with LED or comparable energy-efficient technologies;

- Support the use of procurement practices that promote the use of energy efficient products and equipment;
- Support and coordinate efforts that address strategies to reduce greenhouse gases into planning efforts; and
- Promote energy efficiency, solar energy production and other methods of reducing GHG production.

- Emission Reduction Plan

  - Prior to or in conjunction with the adoption of the proposed 2014 RTP, Kern COG and/or its member agencies will develop a GHG Emissions Reduction Plan that includes the following:
    - General discussion of the potential impacts that GCC poses to the Kern County region, with particular focus on potential impacts related to RTP facilities, to the extent that such information is available;
    - A baseline inventory of total GHG emissions directly and indirectly from transportation in the County that currently exist, and review of potential targets and timelines for achieving GHG reductions;
    - Development of feasible GHG emissions reduction measures and strategies to achieve reductions in RTP GHG emissions. Such reduction measures may include construction of new transportation projects, modification of existing facilities or services, incentive or funding programs, pricing strategies, regulations or any other actions that reduce GHG emissions associated with RTP activities; and
    - State protocols and GHG emissions inventory mechanisms are necessary tools to track and monitor GHG emissions at the local level. Kern COG and member agencies must determine, in cooperation with the state, the solutions that will best minimize its potential risks and maximize its potential benefits.

- Intelligent Transportation Systems

  - Develop an Intelligent Transportation Systems (ITS) strategy to implement the Integrated Performance Management Systems Network that will:
    - Interconnect the region's local transportation management centers, including the use of cameras, and computer hardware and software to detect and clear accidents;
    - Use technology to improve traffic signal timing in order to optimize traffic flow and transit service; and
    - Involve new equipment to improve on-time transit performance and provide real-time transit information at stops and stations.

- Alternative Fuel Vehicle and Infrastructure Toolkit for Local Governments

  - Kern COG will develop an Alternative Fuel Vehicle (AFV) and Infrastructure Toolkit for member agencies that will contain best practices related to ordinances, analytical tools, financing opportunities, codes, and standards related to reducing GHG emissions. Kern COG will identify the alternative fuel vehicle(s) (e.g. neighborhood electric vehicles) and alternative fuel infrastructure with the potential to result in the greatest GHG emission reductions.

Kern COG will conduct a public education program for local governments and other public agencies, as appropriate to encourage the use of alternative fuel vehicles and infrastructure; and

- Kern COG will work with its member agencies to increase the number of AFVs (i.e., vehicles not powered strictly by gasoline or diesel fuel) both in municipally owned vehicles, as well as those owned by franchisees of these cities, such as trash haulers, green waste haulers, street sweepers, and curbside recyclable haulers. Such AFVs shall have GHG emissions at least 10 percent lower than comparable gasoline- or diesel-powered vehicles. The Alternative Fuel Vehicle and Infrastructure Toolkit described above will include best practices strategies to aid in the transformation of municipally owned or contracted fleets, including vehicle fleets operated and/or funded, at least in part by Kern COG.

- Transportation Pricing Policy (GET Long Range Transit Study)

Kern COG will prepare an analysis on the impacts and the viability of using pricing policies with the transit system and selected portions of the road network to encourage people to drive less and use transit, walking, and bicycling modes more. This study will identify strategies to reduce GHG emissions that will include, but are not limited to, free or reduced transit fares during "spare the air" days; fare-free zones on the transit system; transit vouchers; days on which transit is free; congestion pricing options for portions of the road system, such as tolls on freeways and highways; and congestion-pricing to enter certain high-traffic areas served by public transit (e.g. downtown areas). Kern COG shall adopt a transportation pricing policy based upon these strategies, and shall conduct seminars with local government staff, planning commissioners and elected officials and members of the private development, planning, engineering and design communities to disseminate these strategies.

- Public Education Program on Individual Transportation Behavior and Climate Change

In conjunction with key partners such as local air districts, public utility providers, area chambers of commerce and others, Kern COG will create a public information program to educate the public about the connection between individual transportation behavior and global climate change, including transportation behavior modifications the public can make to reduce their GHG emissions over time. Kern COG shall include information on its website that is focused on global climate change. The website shall identify actions the public can take to reduce their carbon footprint, and provide web links to sources of information designed to promote alternative mode use (carpools, vanpools, public transit, bicycling, walking, and telecommuting) and other travel demand management strategies.

- Workshop on Global Climate Change for Local Government Officials and Create GHG Emissions Reduction Strategies Toolkit

  - Kern COG will provide funding for a workshop on global climate change for local government officials that will focus on practical techniques that local governments can implement to reduce GHG emissions at the city and county level. Workshop topics shall include, but are not limited to the following:
    - The basic science behind climate change and its effects on the Kern County Region;
    - Addressing the California Environmental Quality Act (CEQA) and the effects of AB 32;

- What cities and counties are doing to address climate change and CEQA;
- Cost effective actions cities can take to reduce greenhouse emissions; and
- Actions being taken in the Kern County area to advance and support innovative "green" business; and

➢ Kern Cog in conjunction with other key partners, shall produce a toolkit for local governments to use to take effective actions to reduce greenhouse gas emissions over time. The toolkit will incorporate recommendations by the workshop participants to identify which issues are important for the region and the tools and resources they would like to have available to reduce greenhouse emissions.

♦ Establish a Baseline for Kern's Own GHG Impacts

➢ Starting in calendar year 2011, Kern COG shall measure and record the GHG emissions associated with its own operations in an accurate manner and in a format consistent with the California Climate Action Registry's own reporting protocol in order to establish a baseline against which any future GHG reductions may be applied. The report shall be independently audited by a State and Registry approved certifier. The report shall include the following elements:

- Indirect emissions from electricity and natural gas use;
- Direct emissions from mobile source combustion (agency vehicles);
- Indirect emissions from business-related employee air travel;
- Direct and Indirect emissions from employee commuting; and
- Indirect emissions associated with Kern COG purchasing practices; and

➢ Kern COG shall continue to report on its own GHG emissions consistent with this format in subsequent years and track its progress in reducing emissions.

♦ Project level environmental documents shall analyze construction and maintenance project Greenhouse Gas (GHG) emissions

♦ Develop a Sustainable Communities Strategy (SCS) in compliance with SB 375 prior to the adoption of the next RTP

1. Within one year from adoption of the next RTP, Kern COG will undertake the following: Kern COG will work with the local jurisdictions and transit operators within Kern County to develop countywide land use scenarios that reflect different population distributions and land use (mix and density), and multimodal transportation strategies, utilizing the Kern COG regional travel demand model in coordination with a rapid fire tool similar to I-Places. Scenarios will be developed to identify the alternatives that demonstrate potential reductions in vehicle miles traveled (VMT) and total vehicle miles; GHG, conventional and toxic air pollutant emissions; long distance commute trips; and other such factors discussed in the RTP and EIR as the COG Board thinks advisable consistent with state and federal law.

   Coordination with local agencies currently in the development process of local climate action plans or general plan updates are important for consistency purposes. The schedule identified to develop alternative scenarios should be flexible to allow incorporation of these planning efforts into the regional scenario development effort.

Public participation in this process is important to Kern COG and will be incorporated into the scenario development process identified above.

2. Upon completion of the scenario development exercise above, Kern COG will use the data from this exercise as well as public input to develop a multimodal transportation strategy that when combined with land use demonstrates the most potential to meet the following goals: reductions in vehicle miles traveled (VMT) and total vehicle miles; GHG, conventional and toxic air pollutant emissions; long distance commute trips; and other such factors discussed in the RTP and EIR as the COG Board thinks advisable consistent with state and federal law. This strategy may be one of the scenarios developed in 1 above or may be a hybrid scenario.

3. The resulting multimodal transportation strategy from 2 above will be presented to the Kern COG Board in 2013 as an update to the 2011 RTP, for approval or disapproval by the Board, subject to all applicable federal and state laws.

Significance After Mitigation

Kern County is estimated to grow in population by an estimated 522,958 persons between 2010 and 2035. Kern COG has used the best available information to determine whether the 2011 RTP is consistent with the State's achievement of the AB 32 GHG emission reductions. Implementation of the mitigation measures described above will assist in the reduction of per capita VMT levels throughout Kern County, which will assist in meeting the stated goals of AB 32. The 2011 RTP and RTP Amendment No.1 have included numerous projects, action items, funding priorities, and programs to develop and improve alternative modes of transportation throughout the County and Kern COG continues to coordinate with local land use agencies to assist in the development of plans and policies aimed at reducing VMT.

Kern COG responds to congestion through the investment in roadway capacity increasing measures once all reasonable non-capacity measures have been employed. The 2011 RTP includes approximately $580 million available to Transit, and other funds available to other modes including non-motorized (bicycle and pedestrian), alternative-fuel vehicle projects, transit oriented infrastructure for in-fill developments, and others.

The Kern County Regional Blueprint has been prepared to establish a coordinated long-range (year 2050) regional vision between transportation, land use, and the environment from an overall quality of life perspective. The completion of the Regional Blueprint serves as a starting point for Kern COG as they begin development of a Sustainable Communities Strategy in accordance with the requirements of SB 375. In developing the Sustainable Communities Strategy, Kern COG will consider the Blueprint Regional Vision Statement, the Blueprint Guiding Principles, and the Blueprint Performance Measures & Indicators (PMIs) that were developed for the Regional Blueprint. In addition, they will utilize the best available tools and techniques to develop a strategy that contributes to the State's achievement of the AB 32 GHG emission reductions.

Mitigation measures are presented above that will reduce GHG emissions to the extent feasible considering requirements set forth in AB 32. Such measures will also assist in the promotion and implementation of Smart Growth and sustainable planning practices by the cities and the County. While such feasible mitigation

measures will reduce GHG impacts, fuel consumption, goods movement GHG emissions, and on-road GHG emissions are estimated to increase on a per capita basis between 2005 and 2035. Even though all feasible mitigation measures have been identified to reduce the level of impact, impacts ***cannot be mitigated to a less than significant level*** consistent with the findings of the 2011 RTP SEIR.

SUMMARY OF MITIGATION MEASURES & MITIGATION MONITORING PROGRAM

The following section provides a summary of 2011 RTP SEIR and SEIR Addendum mitigation measures and the associated mitigation monitoring program. Based on findings identified in Section 6 of the Draft EIR, projects contained in the 2011 RTP and the Air Quality Impact and Conformity Analysis, the preferred alternative was adopted as the Final 2011 RTP. This alternative was analyzed considering historical growth rates in vehicle miles traveled (VMT) and vehicle trips (VT), as well as anticipated growth in the use of other forms of transportation such as transit, rail, aviation, and non-motorized.

The project alternative (2011 RTP) was characterized as the "worst case" alternative considering traditional transportation system improvements. Improvement projects evaluated and identified under this alternative were "financially constrained" in accordance with the SAFETEA-LU federal surface transportation funding act and air quality conformity requirements. Further, the project focused on "traditional" land use planning activities, i.e., designation of planned growth and development consistent with established land use density policies. This includes the designation of urban development consistent with adopted local agency General Plans. One additional mitigation measure has been added to Section 3.5 (Climate Change) of the 2011 RTP SEIR consistent with the additional environmental analysis and mitigation measures included in the Climate Change section of this SEIR Addendum (reference Page 92).

MITIGATION MEASURES

Aesthetics

3.1 Mitigation

1. All mitigation measures will be included in individual improvement project-level analysis, as appropriate. The implementation agency or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with mitigation measures.

    - Implement design guidelines, local policies, and programs aimed at protecting views of scenic corridors and avoiding visual intrusions; and

    - To the extent feasible, noise barriers that will not degrade or obstruct a scenic view will be constructed. Noise barriers will be well landscaped, complement the natural landscape and be graffiti-resistant.

2. All mitigation measures will be included in individual improvement project-level analysis, as appropriate. The implementation agency or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with mitigation measures.

    - Avoid construction of transportation facilities in state and locally designated scenic highways and vista points; and

- If transportation facilities are constructed in state and locally designated scenic highways and/or vista points, design, construction, and operation of the transportation facility will be consistent with applicable guidelines and regulations for the preservation of scenic resources along the designated scenic highway.

3. All mitigation measures will be included in individual improvement project-level analysis, as appropriate. The implementation agency or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with mitigation measures.

- Develop design guidelines for each type of transportation facility that make elements of proposed facilities visually compatible with surrounding areas. Visual guidelines will, at a minimum, include setback buffers, landscaping, color, texture, signage, and lighting criteria. The following methods will be employed whenever possible:

  - Transportation systems will be designed in a manner where the surrounding landscape dominates;
  - Transportation systems will be developed to be compatible with the surrounding environment (i.e., colors and materials of construction material);
  - If locally native plants is used, it will be used as screening and landscaping that blends in and complements the natural landscape;
  - Trees bordering highways will remain or be replaced so that clear cutting is not evident; and
  - Grading will blend with the adjacent landforms and topography.

- Project implementation agencies shall design projects to minimize contrasts in scale and massing between the project and surrounding natural forms and development. Project implementation agencies shall design projects to minimize their intrusion into important viewsheds and use contour grading to better match surrounding terrain. To the maximum extent feasible, landscaping along highway corridors shall be designed to add significant natural elements and visual interest to soften the hard-edged, linear travel experience that would otherwise occur.

- Project implementation agencies shall use natural landscaping to minimize contrasts between the project and surrounding areas. Wherever possible, interchanges and transit lines shall be designed at the grade of the surrounding land to limit view blockage. Edges of major cut-and-fill slopes should be contoured to provide a more natural looking finished profile. Project implementation agencies shall replace and renew landscaping to the greatest extent possible along corridors with road widenings, interchange projects, and related improvements. New corridor landscaping shall be designed to respect existing natural and man-made features and to complement the dominant landscaping of surrounding areas.

- Project implementation agencies shall construct sound walls of materials whose color and texture complements the surrounding landscape and development and to the maximum extent feasible, use color, texture, and alternating facades to “break up” large facades and provide visual interest. Where there is room, project sponsors shall landscape the sound walls with plants that screen the sound wall, preferably with either native vegetation or landscaping that complements the dominant landscaping of surrounding areas.

4. All mitigation measures will be included in project-level analysis, as appropriate. The implementation agency or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with mitigation measures.

5. Cumulative Measures

- Mitigation measures identified above should also be implemented as applicable to development projects throughout the region.

- In visually sensitive site areas and prior to project approval, local land use agencies shall apply development standards and guidelines to maintain compatibility with surrounding natural areas, including site coverage, building height and massing, building materials and color, landscaping, site grading, etc.

- Local agencies should develop design guidelines for each type of transportation facility that make light elements of proposed facilities visually compatible with surrounding areas. The following methods will be employed whenever possible:
  - Transportation systems will be designed in a manner where the surrounding landscape dominates;
  - Transportation systems will be developed to be compatible with the surrounding environment; and
  - Lighting devices will be employed such as downward facing light, light shields, and amber lumens.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies. (Caltrans and local agencies).

When Mitigation Measures are to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

Agricultural Resources

3.2 Mitigation

1. The impact on significant agricultural resources will be evaluated as part of the appropriate improvement project-specific environmental review. Mitigation measures will be identified to minimize impacts. Implementation agencies will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with all mitigation measures.

    - Individual projects will be consistent with local land use plans and policies that designate areas for urban land use and preserve agricultural lands that support the economic viability of agricultural activities; and

    - Prior to final approval of each individual improvement project, the implementing agency will conduct the appropriate project-specific environmental review, including consideration of potential land use impacts.

2. The impact on significant agricultural resources will be evaluated as part of the appropriate project-specific environmental review. Mitigation measures will be identified to minimize impacts. Implementation agencies will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with all mitigation measures.

    - Individual projects will be consistent with federal, state, and local policies that preserve agricultural lands and support the economic viability of agricultural activities, as well as policies that provide compensation for property owners if preservation is not feasible;

    - For projects in agricultural areas, implementation agencies will contact the California Department of Conservation and the Agricultural Commissioner's office to identify the location of prime farmlands and lands that support crops considered valuable to the local or regional economy;

    - Prior to final approval of each individual improvement project, the implementing agency will establish conservation easement programs to mitigate impacts to prime farmland;

    - Prior to final approval of each individual improvement project, the implementing agency will avoid impacts to prime farmlands or farmlands that support crops considered valuable to the local or regional economy; and

    - Prior to final approval of each individual improvement project, the implementing agency will encourage enrollments of agricultural lands for counties that have Williamson Act programs.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies. (Caltrans and local agencies).

When Mitigation Measures are to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

Air Quality

3.3 Mitigation

1. All mitigation measures will be included in project-level analysis, as appropriate. The individual improvement project proponent or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with mitigation measures.

    - Implementation agencies will ensure implementation of mitigation measures to reduce PM_{10}, $PM_{2.5}$, and NOx emissions from construction sites, including:

        - Maintain on-site truck loading zones;
        - Configure on-site construction parking to minimize traffic interference and to ensure emergency vehicle access;
        - Provide temporary traffic control during all phases of construction activities to improve traffic flow;
        - Use best efforts to minimize truck idling to not more than two minutes during construction;
        - Apply non-toxic soil stabilizers (according to manufacturers' specifications) to all inactive construction areas;
        - During construction, replace ground cover in disturbed areas as quickly as possible;
        - During construction, enclose, cover, water twice daily or apply non-toxic soil binders (according to manufacturers' specifications) to exposed piles with five percent (5%) or greater silt content and to all unpaved parking or staging areas or unpaved road surfaces;
        - During the period of construction, install wheel washers where vehicles enter and exit unpaved roads onto paved roads, or wash off trucks and any equipment leaving the site each trip;
        - During the period of construction, assure that traffic speeds on all unpaved roads be reduced to fifteen (15) mph or less;
        - Pave all construction access roads at least 100 feet on to the site from permanent roadways; and
        - Cover all haul trucks.

    - Implementation agencies will avoid improvement project designs requiring significant amounts of material, such as excavated soil and construction debris, to be transported from the site to disposal facilities. Construction sites will employ a balanced cut/fill ratio to the extent possible, thus reducing haul-truck trip emissions.

2. At those facilities or intersections near sensitive receptors where carbon monoxide concentrations may exist, the implementing agency will reduce or alleviate these concentrations by improving traffic flows through improved signalization, restriping, addition of traffic lanes, and other improvements identified as part of the environmental review of an individual improvement project.

3. As air toxics research continues, Kern COG will coordinate with responsible agencies that utilize the tools and techniques developed for assessing health outcomes as a result of lifetime MSAT exposure. The potential health risks posed by MSAT exposure should continue to be factored into project-level decision-making in the context of environmental review. Specifically, at the project level, local agencies shall require or perform air toxic risk assessments to determine mobile source air toxic impacts for transportation projects.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies. (Caltrans and local agencies).

When Mitigation Measures are to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

Biotic Resources

3.4 Mitigation

1. All mitigation measures will be included in subsequent individual improvement project-level environmental analysis as appropriate. The individual improvement project proponent or local jurisdiction will be responsible for compliance with the mitigation measures during all phases of construction as appropriate. Kern COG will be provided with documentation of compliance with mitigation measures.

    - Construction and operational Best Management Practices (BMPs) will be identified, installed and maintained in order to prevent silt and other pollutants from entering jurisdictional waters and wetlands thereby degrading or destroying wildlife and/or natural habitat. BMPs may include straw bales and/or mats, temporary sedimentation basins, silt fence, sand bag check dams, dry season construction, etc;

    - Native soils in construction areas will be removed, stockpiled separately, and replaced in those areas where onsite revegetation of the native habitat is planned;

    - Any disturbed natural areas will be replanted with appropriate native vegetation following the completion of construction activities;

    - During the individual improvement project design phase, impacts to jurisdictional waters and wetlands will be minimized to the greatest extent feasible and

    - Individual improvement project proponents will obtain and comply with appropriate regulatory requirements prior to construction.

2. All mitigation measures will be included in subsequent individual improvement project-level environmental analysis as appropriate. The individual improvement project proponent or local jurisdiction will be responsible for compliance with the mitigation measures during all phases of construction as appropriate. Kern COG will be provided with documentation of compliance with mitigation measures.

    - Each proposed individual improvement project will consider the displacement of sensitive habitat, sensitive species, and non-native habitat during the individual improvement project design phase.

    - When avoidance of native vegetation removal is not possible, each transportation project shall replant disturbed areas with commensurate native vegetation of high habitat value adjacent to the project (i.e. as opposed to ornamental vegetation with relatively less habitat value).

    - Focused sensitive plant and wildlife species and non-native habitat surveys will be conducted within suitable habitat to determine the distribution of sensitive species within the biological impact area of the proposed transportation improvement project. Sensitive plant and non-native habitat surveys will be conducted during the appropriate flowering season for sensitive plant species with the potential to occur within the individual improvement project area. In all cases, impacts on special status species and/or their habitat shall be avoided during construction to the extent feasible.

    - If sensitive plant or wildlife species and non-native habitat are identified within the biological impact area, a Biological Resource Management Plan (BRMP) will be developed to address appropriate avoidance and

minimization measures. These measures may include seed collection and salvage measures for sensitive plant species and non-native habitat, silt fencing, exclusion fencing and/or appropriate compensation where impacts cannot be fully avoided.

- Individual transportation projects shall include offsite habitat enhancement or restoration to compensate for unavoidable habitat losses from the project site.

- Locations of sensitive species, sensitive habitat, and non-native habitat will be mapped and shown on construction drawings and identified as Environmentally Sensitive Areas (ESAs). Prior to construction, these areas will be flagged and/or fenced to prevent unnecessary impacts from machinery and foot traffic.

- Temporary access roads and staging areas will not be located within areas containing sensitive plant, sensitive wildlife species or non-native habitat wherever feasible, so as to avoid or minimize impacts to these species.

- Construction activities will be scheduled, as appropriate and feasible, to avoid sensitive times that have a greater likelihood to affect significant resources such as spawning periods for fish, nesting season for birds and/or the rainy season for riparian habitat and sediment/erosion control.

- All vegetation (including tall grasses) will be removed between August 16 and February 14, if possible, to avoid potential conflicts with nesting birds. If it is not possible to remove vegetation during that time frame, a nest clearance survey will be completed prior to vegetation clearing. Any detected nests will be mapped and provided with an appropriate buffer as recommended by a qualified biologist. Construction activities within the buffer area will not be allowed until after September 15 or until fledglings have abandoned the nest.

- A Worker Awareness Program (environmental education) shall be developed and implemented to inform project workers of their responsibilities in regards to avoiding and minimizing impacts on sensitive biological resources.

- An Environmental Inspector shall be appointed to serve as a contact for issues that may arise concerning implementation of mitigation measures, and to document and report on adherence to these measures.

- A qualified wetland scientist shall review construction drawings as part of each project-specific environmental analysis to determine whether wetlands will be impacted, and if necessary perform a formal wetland delineation. Appropriate state and federal permits shall be obtained, but each project EIR will contain language clearly stating the provisions of such permits, including avoidance measures, restoration procedures, and in the case of permanent impacts compensatory creation or enhancement measures to ensure a no net loss of wetland extent or function and values.

- Sensitive habitats (native vegetative communities identified as rare and/or sensitive by the CDFG) and special-status plant species (including vernal pools) impacted by projects shall be restored and augmented, if impacts are temporary, at a 1.1:1 ratio (compensation acres to impacted acres). Permanent impacts shall be compensated for by creating or restoring habitats at a 3:1 ratio as close as possible to the site of the impact.

- When work is conducted in identified sensitive habitat areas and/or areas of intact native vegetation, construction protocols shall require the salvage of perennial plants and the salvage and stockpile of topsoil (the surface material from 6 to 12 inches deep) and shall be used in restoring native vegetation to all areas of temporary disturbance within the project area.

- If specific project area trees are designated as "Landmark Trees" or "Heritage Trees", then approval for removals shall be obtained through the appropriate entity, and appropriate mitigation measures shall be developed at that time, to ensure that the trees are replaced. Due to the close proximity of these areas to sensitive wildlife habitats, all mitigation trees will use only locally-collected native species.

- Use resource data to inform transportation decision-making.

- Use watershed, conservation, and recovery plans to identify important environmental considerations for the Kern COG region, such as critical wildlife corridors, the most important areas to protect for sensitive species, and areas with a high concentration of resources.

- Give conservation plans as much weight as General Plans when planning transportation investments.

- Incorporate concepts such as 100 to 200 foot buffers for stream corridors, and identification and improvement of priority culverts that currently restrict wildlife corridors and natural processes of stream and river systems.

- Use parcel maps to identify larger, undivided parcels for ease of acquisition and preservation, and designate areas as potential future mitigation sites.

- Consider the resource, "Eco-logical: An Ecosystem Approach to Developing Infrastructure Projects" (2006), which encourages Federal, State, Tribal and Local partners involved in the infrastructure planning, design, review, and construction to use flexibility in regulatory processes.

- Identify financial mechanisms to fund mitigation, such as development fees, sales tax, or the use of funds from alternative methods to identify and protect critical resource areas.

- Establish conservation easements that connect to and expand existing conservation areas.

- Describe locally-developed measures such as designated open space, measures requiring development set-backs near streams, etc.

- The following list of data resources should be referenced during development of biotic plans and studies for transportation improvement projects:

  - U.S. Fish & Wildlife Service species recovery plans;
  - USDA Natural Resources Conservation Service wetland data;
  - Nature Conservancy data and regional planning documents;
  - California Department of Fish and Game Natural Diversity Database; and
  - Local non-profit and land trust group information.

3. All mitigation measures will be included in subsequent individual improvement project-level environmental analysis as appropriate. The individual improvement project proponent or local jurisdiction will be responsible for compliance with the mitigation measures during all phases of construction as appropriate. Kern COG will be provided with documentation of compliance with mitigation measures.

   The height, spacing, number and type of light fixtures will be selected and installed to minimize intrusive light escaping from the physical boundaries of the site.

- Road noise minimization methods such as native brush and tree planting adjacent to heavy noise producing transportation facilities or will be incorporated where feasible.

4. All mitigation measures will be included in subsequent individual improvement project-level environmental analysis as appropriate. The individual improvement project proponent or local jurisdiction will be responsible for compliance with the mitigation measures during all phases of construction as appropriate. Kern COG will be provided with documentation of compliance with mitigation measures.

   - During final design, implementing agencies, will design, construct, and maintain terrestrial wildlife crossings in order to minimize barrier effects and habitat fragmentation created by the transportation improvement project.

   - During final design, implementing agencies, will design, construct, and maintain any structure/culvert placed within a stream where endangered or threatened fish occur/may occur. The structure/culvert will not constitute a barrier to upstream or downstream movement of aquatic life, or cause an avoidance reaction by fish that impedes their upstream or downstream movement. This includes, but is not limited to, the supply of water at an appropriate depth for fish migration.

5. All mitigation measures will be included in subsequent individual improvement project-level environmental analysis as appropriate. The individual improvement project proponent or local jurisdiction will be responsible for compliance with the mitigation measures during all phases of construction as appropriate. Kern COG will be provided with documentation of compliance with mitigation measures.

   - Construction and operation of the proposed transportation individual improvement project will comply with the requirements of all adopted HCPs and other preserved areas.

6. Siltation Measures:

   - Individual projects near water resources shall implement Best Management Practices (BMPs) at construction sites to minimize erosion and sediment transport from the area. BMPs include encouraging growth of vegetation in disturbed areas, using straw bales or other silt-catching devices, and using settling basins to minimize soil transport.

   - Individual projects shall schedule construction activities to avoid sensitive times for biological resources (e.g. steelhead spawning periods during the winter and spring) and to avoid the rainy season when erosion and sediment transport is increased.

7. The cumulative impacts to biological resources, due to the forecast urban development associated with the 2011 RTP, would be mitigated using the same measures detailed for Impacts 3.4.1 through 3.4.6, in addition to the following measure:

   - Future impacts to biotic resources shall be minimized through cooperation and information sharing between the implementation agency and affected resource agencies.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies. (Caltrans and local agencies).

When Mitigation Measures are to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

3.5 Mitigation

1, 2 The ultimate sources of increased transportation emissions in Kern County are population and employment growth, which will increase with or without projects referenced in the 2011 RTP Amendment No.1. Kern COG does not implement land use policy in Kern County; rather, this is under the jurisdiction of the County and the various cities. Decisions about the place, pace, and scale of growth and development are reflected in the general plans and project approvals adopted by the local agencies. The 2011 RTP Amendment No.1 is designed to complement, rather than change, the plans adopted by the local agencies. Thus, the ultimate effect of the 2011 RTP Amendment No.1 on transportation emissions is not to increase the amount of travel per se, but rather to influence where and how travel occurs within and through the County.

A number of mitigation measures are included to address criteria emissions. Public transit has been enhanced in the 2011 RTP compared to the previous RTP (adopted in 2007). Such improvements will help mitigate expected increases in emissions resulting from increased population and employment and the impact of planned growth and development on the regional transportation system. The RTP also includes references to a number of studies. The Plan contains a number of projects and significant funding for various forms of transportation in addition to streets and highways. Kern COG is coordinating implementation of the San Joaquin Valley Blueprint with the other seven counties within the San Joaquin Valley. All eight counties are located in the same Air Basin (San Joaquin Valley Air Basin) and received the grant for Blueprint development from the State of California. The Blueprint programs in California are designed to address the three "E"s of Regional Blueprint Planning; that is, Energy Efficiency, the Environment, and Economic Development. The Kern County Blueprint identifies a vision, values, goals, objectives, and implementing strategies that can be planned by Kern COG and implemented by local agencies within the County to reduce vehicle trips, vehicle miles traveled (VMT), and support increased walkability, passenger rail, public transit systems, and bicycling.

Further, public transit over the next 20 years has been enhanced in the 2011 RTP over existing conditions and even when compared to the previous RTP (adopted in 2007). Such improvements will help mitigate expected increases in emissions resulting from increased population and employment and the impact of planned growth and development on the regional transportation system. Furthermore, the RTP includes references to a number of studies (some of which are described above). The Project improvements are expected to reduce VMT and vehicle trips and as a result, GHG emissions.

Kern COG cannot require that local agencies, Caltrans, the Air Districts or other agencies that use diesel-powered vehicles and equipment apply retrofit emission control devices, such as diesel oxidation catalysts and diesel particulate filters verified by CARB. Kern COG also cannot require that the same agencies use alternative forms of cement and asphalt that have lower GHG emissions. It is recommended however, that responsible agencies (local agencies, the Air District, Caltrans, and others) consider the implementation of such measures during individual project development and construction.

Both Kern COG and responsible agencies implementing projects outlined in the 2011 RTP Amendment No.1 will be required to adhere to any future applicable mandatory regulations regarding global warming resulting from the passage of AB 32 and AB 1493, but the exact character of such future implementing strategies is not known at this time. The following mitigation measures are intended to address regional and project-level impacts, as appropriate. For project-level impacts, the individual improvement project proponent or local jurisdiction will be responsible for ensuring adherence to the mitigation measures.

Through Implementation of the Regional Blueprint and coordination with implementation agencies, the following mitigation measures will result in reduced GHG emissions:

- Transportation

  - Work with member agencies to increase the number of Alternative Fuel Vehicles (AFV) in municipally owned vehicles;
  - Funding retrofit, repower or replacement of diesel vehicles with funding from applicable federal, state and local sources;
  - Encouragement of technology, such as electrification, to provide alternatives to operating the heating and air conditioning, refrigeration units while idling at distribution centers, warehouses, truck shops and other facilities where diesel trucks may reside overnight or for periods of several hours;
  - Subsidize carpool and vanpool programs that originate in Kern County;
  - Support efforts that further analyze GHG emission contributions from goods movement through transportation corridors, trucking and other relevant freight movement practices;
  - Support the use of grants, loans and incentives to assist local governments with the implementation of climate change response activities and GHG reduction strategies;
  - Support State legislation to provide incentive funds to local governments to develop and implement GHG reduction programs; and
  - Support efforts that will enable cities and counties to purchase new vehicles for local fleets that conform to state purchasing standards, are fuel efficient, low emission or use alternative fuels.

- Land Use (Blueprint)

  - Develop land use patterns, which encourage people to walk, bicycle, or use public transit for a significant number of their daily trips;
    - Use circulation elements of general plans to ensure that development is consistent and well connected by alternative transportation modes (as required by AB 1358 effective January 1, 2011);
    - Adopt transit-oriented or pedestrian-oriented design strategies and select areas appropriate for these designs in the general plan;
    - Support higher density development in proximity to commonly used services and transportation facilities, such as transit centers;
    - Promote a balance of housing, shopping, and other amenities on the urban fringe and outlying communities that service strategic rural employment areas such as military bases, prisons, wind/alternative energy areas, oil production/mining, agriculture/ranching, food processing, warehouse distribution/intermodal centers, travel centers, recreation areas, etc.;
    - Promote affordable housing affordable relative to average wages in the community to reduce commute distances;
    - Promote reduced travel by providing electric vehicles, bike, pedestrian and equestrian paths and park-and-ride lots;
    - Promote phasing of new housing developments that reduce the need for long distance commutes to work and retail centers while construction is underway;
    - Provide subsidies for alternative transportation such as vanpools and transit until such time as ridership is at a level that supports the minimum transit fare box subsidy requirements;
    - In transit-oriented areas, provide for express transit or bus rapid transit service and circulator feeder systems. Service should plan for direct access to the Bakersfield High Speed Rail station;
    - In transit-oriented areas, reduce parking requirements and provide car/vanpool parking areas;
    - In transit oriented areas include a transit pass/subsidy as part of the housing rental agreement,

commercial rent agreement, employer benefit package, or monthly housing payment of new developments to ensure that express transit service has sufficient ridership to meet the minimum fare box requirement; and
    - Space walkable/bikeable transit centers a minimum of 1 – 3 miles apart to ensure that travel times compete with passenger vehicle travel times.
- In urban areas, develop in a compact, efficient form to reduce vehicle miles traveled and to improve the efficiency of alternatives to the automobile:
    - Use the control of public services to direct development to the most appropriate locations; and
    - Promote infill of vacant land and redevelopment sites;
- Encourage project site designs and subdivision street and lot designs that support walking, bicycling, and transit use:
    - Adopt design guidelines and standards promoting plans that encourage alternative transportation modes; and
    - Require certain sites to be created to allow convenient access by transit, bicycle, and walking;
- Accommodate projected population growth by identifying appropriate areas for urban and rural growth, economic development, and multi-modal transportation corridors that support smart growth principles;
- Promote 'downtowns' or 'urban centers' as the commercial, financial and social centers of communities. Promote higher density housing located adjacent to and within convenient walking distance to downtown, urban mixed use centers and/or transit corridors;
- Support and encourage policies and plans, which direct growth to well planned neighborhoods and communities;
- Encourage the design and development of an effective transportation system that integrates all modes into a seamless, reliable, cost-efficient system, including intelligent transportation solutions and high tech communication options;
- Support intermodal travel including park-and-ride, rideshare, bicycle, rail and transit programs;
- Support increased mass transit connectivity and accessibility;
- Promote reduction of vehicle miles traveled;
- Promote the achievement and maintenance of State and Federal standards for air quality;
- Encourage General Plan, Community Plan and Specific Plan updates to include air quality elements, Greenhouse Gas Emission Reduction Plans and mitigation measures that reduce air pollution and vehicle miles traveled from existing and new development;
- Encourage the reduction of air pollution impacts from new developments;
- Help establish baseline GHG emission rates for municipalities; and
- Promote landscaping strategies that will reduce GHG.

♦ Energy

- Promote the use of LED technology or comparable energy-efficient technology for traffic lights, rail signals and other features compatible with LED or comparable energy-efficient technologies;
- Support the use of procurement practices that promote the use of energy efficient products and equipment;
- Support and coordinate efforts that address strategies to reduce greenhouse gases into planning efforts; and
- Promote energy efficiency, solar energy production and other methods of reducing GHG production.

♦ Emission Reduction Plan

- Prior to or in conjunction with the adoption of the proposed 2014 RTP, Kern COG and/or its member agencies will develop a GHG Emissions Reduction Plan that includes the following:

- General discussion of the potential impacts that GCC poses to the Kern County region, with particular focus on potential impacts related to RTP facilities, to the extent that such information is available;
- A baseline inventory of total GHG emissions directly and indirectly from transportation in the County that currently exist, and review of potential targets and timelines for achieving GHG reductions;
- Development of feasible GHG emissions reduction measures and strategies to achieve reductions in RTP GHG emissions. Such reduction measures may include construction of new transportation projects, modification of existing facilities or services, incentive or funding programs, pricing strategies, regulations or any other actions that reduce GHG emissions associated with RTP activities; and
- State protocols and GHG emissions inventory mechanisms are necessary tools to track and monitor GHG emissions at the local level. Kern COG and member agencies must determine, in cooperation with the state, the solutions that will best minimize its potential risks and maximize its potential benefits.

- Intelligent Transportation Systems

  - Develop an Intelligent Transportation Systems (ITS) strategy to implement the Integrated Performance Management Systems Network that will:
    - Interconnect the region's local transportation management centers, including the use of cameras, and computer hardware and software to detect and clear accidents;
    - Use technology to improve traffic signal timing in order to optimize traffic flow and transit service; and
    - Involve new equipment to improve on-time transit performance and provide real-time transit information at stops and stations.

- Alternative Fuel Vehicle and Infrastructure Toolkit for Local Governments

  - Kern COG will develop an Alternative Fuel Vehicle (AFV) and Infrastructure Toolkit for member agencies that will contain best practices related to ordinances, analytical tools, financing opportunities, codes, and standards related to reducing GHG emissions. Kern COG will identify the alternative fuel vehicle(s) (e.g. neighborhood electric vehicles) and alternative fuel infrastructure with the potential to result in the greatest GHG emission reductions. Kern COG will conduct a public education program for local governments and other public agencies, as appropriate to encourage the use of alternative fuel vehicles and infrastructure; and
  - Kern COG will work with its member agencies to increase the number of AFVs (i.e., vehicles not powered strictly by gasoline or diesel fuel) both in municipally owned vehicles, as well as those owned by franchisees of these cities, such as trash haulers, green waste haulers, street sweepers, and curbside recyclable haulers. Such AFVs shall have GHG emissions at least 10 percent lower than comparable gasoline- or diesel-powered vehicles. The Alternative Fuel Vehicle and Infrastructure Toolkit described above will include best practices strategies to aid in the transformation of municipally owned or contracted fleets, including vehicle fleets operated and/or funded, at least in part by Kern COG.

- Transportation Pricing Policy (GET Long Range Transit Study)

  Kern COG will prepare an analysis on the impacts and the viability of using pricing policies with the transit system and selected portions of the road network to encourage people to drive less and use transit, walking, and bicycling modes more. This study will identify strategies to reduce GHG emissions that will include, but are not limited to, free or reduced transit fares during "spare the air" days; fare-free zones on the transit system; transit vouchers; days on which transit is free; congestion pricing options for portions of the road system, such as tolls on freeways and highways; and congestion-pricing to enter certain high-traffic areas served by public transit (e.g. downtown areas).

Kern COG shall adopt a transportation pricing policy based upon these strategies, and shall conduct seminars with local government staff, planning commissioners and elected officials and members of the private development, planning, engineering and design communities to disseminate these strategies.

- Public Education Program on Individual Transportation Behavior and Climate Change

  In conjunction with key partners such as local air districts, public utility providers, area chambers of commerce and others, Kern COG will create a public information program to educate the public about the connection between individual transportation behavior and global climate change, including transportation behavior modifications the public can make to reduce their GHG emissions over time. Kern COG shall include information on its website that is focused on global climate change. The website shall identify actions the public can take to reduce their carbon footprint, and provide web links to sources of information designed to promote alternative mode use (carpools, vanpools, public transit, bicycling, walking, and telecommuting) and other travel demand management strategies.

- Workshop on Global Climate Change for Local Government Officials and Create GHG Emissions Reduction Strategies Toolkit

  - Kern COG will provide funding for a workshop on global climate change for local government officials that will focus on practical techniques that local governments can implement to reduce GHG emissions at the city and county level. Workshop topics shall include, but are not limited to the following:
    - The basic science behind climate change and its effects on the Kern County Region;
    - Addressing the California Environmental Quality Act (CEQA) and the effects of AB 32;
    - What cities and counties are doing to address climate change and CEQA;
    - Cost effective actions cities can take to reduce greenhouse emissions; and
    - Actions being taken in the Kern County area to advance and support innovative "green" business; and

  - Kern Cog in conjunction with other key partners, shall produce a toolkit for local governments to use to take effective actions to reduce greenhouse gas emissions over time. The toolkit will incorporate recommendations by the workshop participants to identify which issues are important for the region and the tools and resources they would like to have available to reduce greenhouse emissions.

- Establish a Baseline for Kern's Own GHG Impacts

  - Starting in calendar year 2011, Kern COG shall measure and record the GHG emissions associated with its own operations in an accurate manner and in a format consistent with the California Climate Action Registry's own reporting protocol in order to establish a baseline against which any future GHG reductions may be applied. The report shall be independently audited by a State and Registry approved certifier. The report shall include the following elements:
    - Indirect emissions from electricity and natural gas use;
    - Direct emissions from mobile source combustion (agency vehicles);
    - Indirect emissions from business-related employee air travel;
    - Direct and Indirect emissions from employee commuting; and
    - Indirect emissions associated with Kern COG purchasing practices; and

  - Kern COG shall continue to report on its own GHG emissions consistent with this format in subsequent years and track its progress in reducing emissions.

- Project level environmental documents shall analyze construction and maintenance project Greenhouse Gas (GHG) emissions

- Develop a Sustainable Communities Strategy (SCS) in compliance with SB 375 prior to the adoption of the next RTP

1. Within one year from adoption of the next RTP, Kern COG will undertake the following: Kern COG will work with the local jurisdictions and transit operators within Kern County to develop countywide land use scenarios that reflect different population distributions and land use (mix and density), and multimodal transportation strategies, utilizing the Kern COG regional travel demand model in coordination with a rapid fire tool similar to I-Places. Scenarios will be developed to identify the alternatives that demonstrate potential reductions in vehicle miles traveled (VMT) and total vehicle miles; GHG, conventional and toxic air pollutant emissions; long distance commute trips; and other such factors discussed in the RTP and EIR as the COG Board thinks advisable consistent with state and federal law.

2. Coordination with local agencies currently in the development process of local climate action plans or general plan updates are important for consistency purposes. The schedule identified to develop alternative scenarios should be flexible to allow incorporation of these planning efforts into the regional scenario development effort. Public participation in this process is important to Kern COG and will be incorporated into the scenario development process identified above.

3. Upon completion of the scenario development exercise above, Kern COG will use the data from this exercise as well as public input to develop a multimodal transportation strategy that when combined with land use demonstrates the most potential to meet the following goals: reductions in vehicle miles traveled (VMT) and total vehicle miles; GHG, conventional and toxic air pollutant emissions; long distance commute trips; and other such factors discussed in the RTP and EIR as the COG Board thinks advisable consistent with state and federal law. This strategy may be one of the scenarios developed in 1 above or may be a hybrid scenario.

4. The resulting multimodal transportation strategy from 2 above will be presented to the Kern COG Board in 2013 as an update to the 2011 RTP, for approval or disapproval by the Board, subject to all applicable federal and state laws.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies. (Caltrans and local agencies).

When Mitigation Measures are to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

Cultural Resources

3.6 Mitigation

1. Individual improvement project-specific impacts on cultural resources will be identified at the earliest planning stages of the individual improvement project. Since avoidance is the preferred means for mitigating impacts on cultural resources, cultural resource specialists should be included on the individual improvement project planning teams and records searches, background research, Native American consultations, field inventories, and other investigations should be performed during initial routing studies or other comparable planning activities. To comply with state and federal laws and regulations governing cultural resources, the following specific activities will be completed prior to certification of the subsequent or individual improvement project EIR/EIS or other CEQA/NEPA documents.

   - Records Searches

     For each individual improvement project, a records search will be performed at the Southern San Joaquin Valley Information Center of the California Historical Resources Information System, housed at California State University, Bakersfield. Resources to be examined at the Information Center include site location and survey coverage base maps, listings on the National Register of Historic Places and California Register of Historic Resources, State Historic Property Data Files, National Register of Determined Eligible Properties, California Historical Landmarks, California Points of Historic Interest, and California Office of Historic Preservation Archaeological Determinations of Eligibility. As appropriate for each individual improvement project, background research will also be conducted at city and county historical societies, libraries, museums, and other institutions that may have relevant information on the nature and location of cultural resources within the individual improvement project area.

   - Native American Consultation

     For each individual improvement project, contact the Native American Heritage Commission (NAHC) in Sacramento and request a search of their Sacred Lands File for information on the individual improvement project area. The NAHC will also supply a list of Native American representatives whose traditional lands encompassed the individual improvement project area. Those included on the NAHC consultant list will be contacted by letter and follow-up telephone calls to request information about the study area, and to provide them the opportunity to articulate their views on possible impacts of the individual improvement project and appropriate mitigation measures.

   - Paleontological Research

     Conduct a records and literature search at the appropriate institutions, review geological maps for potential fossiliferous formations, and prepare an initial assessment of paleontological resource sensitivity in the individual improvement project area. Compile a list of relevant sites and known fossiliferous formations, and assess each individual improvement project's potential to impact paleontologically significant resources.

   - Archaeological Survey

     For each individual improvement project, systematically traverse unsurveyed areas on foot using transects spaced 15-20 meters apart. Previously surveyed areas, as indicated by the Information Center survey coverage base maps, will be resurveyed if prior surveys were completed more than ten years previously or if survey coverage was insufficient due to conditions at the time. Historical or prehistoric archaeological sites discovered

within or immediately adjacent to the survey area will be documented according to current professional standards on the appropriate Department of Parks and Recreation forms (DPR-523). Previously recorded sites will be revisited, and their documentation will be updated to the current formats and standards. All sites, features, and isolates will be photographed using 35-millimeter and/or digital pictures, and their locations plotted on the appropriate USGS topographic 7.5' quadrangle. Planimetric site sketch maps will be prepared for each archaeological site, depicting site boundaries, concentrations, features, diagnostic artifacts, and areas of disturbance. Site locations will also be plotted using a Global Positioning System.

- Architectural Survey

Buildings, structures, objects, linear cultural features, and other non-archaeological properties will be inventoried to current professional standards and recorded on the appropriate Department of Parks and Recreation forms (DPR-523). Documentation on previously recorded sites will be updated to the current formats and standards. All resources will be photographed using 35-millimeter and/or digital pictures, and their locations plotted on the appropriate USGS topographic 7.5' quadrangle.

- Significance Evaluation and Impact Assessment

Any cultural resources that will be directly impacted by a proposed individual improvement project will be evaluated for significance according to the criteria of the National Register and/or California Register, as appropriate. If the boundaries of the resource or its spatial relationship to the impact area are unclear, then boundary definition using more detailed surface and subsurface investigations may be required. Significance evaluations may require additional archival and background research, additional field documentation, or other studies. Evaluation of archaeological properties may require test excavations, backhoe trenching, or other forms of subsurface investigation; laboratory processing and analysis of recovered remains; and a variety of special technical studies. These evaluations will define the qualities of the resource that make it significant and assess site integrity as a means for judging the nature and extent of individual improvement project impacts. Significance evaluations and impact assessments will be performed by appropriately qualified specialists meeting the Secretary of Interior's Professional Qualifications Standards (FR 190: 44740–44741). Artifacts and other remains collected from the field, along with field records and other documentation, will be curated at the Museum of Anthropology, California State University, Bakersfield, or another institution capable of providing secure, long-term storage, care, and access to the public.

- Technical Report/EIR Sections

Prepare a technical report documenting the results of the records search, background research, Native American consultation, paleontological research, field surveys, resource evaluations, and other studies. Because these reports may detail locations within the individual improvement project areas known to be culturally and paleontologically sensitive, they will be confidential technical appendices to each EIR/EIS. Summary sections included in the body of the EIR/EIS will not disclose sensitive site location information. The confidential technical report and EIR/EIS sections will discuss the importance of historical, archaeological, and paleontological resources identified during the study, identify the potential for significant impacts, and discuss adequate and feasible mitigation measures. The reports will adhere to professional standards outlined by the State Office of Historic Preservation in *Archaeological Resource Management Reports (ARMR): Recommended Contents and Format* (Jackson 1990).

- Agency Consultation

  For federally entailed projects, the lead federal agency must consult with the State Historic Preservation Officer (SHPO) regarding the identification, evaluation, and subsequent mitigative treatment of cultural resources. The SHPO does not play a role in the CEQA process unless state lands, state-owned properties, or unusually important resources are involved. For federal projects, the SHPO is asked to review and concur with the federal agency's findings regarding the significance of resources and the appropriate treatment. Initial consultation with the SHPO should occur early in the planning process, with follow-on consultation and review at each stage.

  If the studies described above determine that significant cultural resources will be affected by the proposed individual improvement project, then additional impact mitigation may be required if the individual improvement project cannot be redesigned to avoid the resource. Impact mitigation may take a variety of forms depending on the nature of the site and the nature and extent impacts. As noted above, site avoidance is the preferred mitigation measure. If resources cannot be avoided entirely, portions of the resources outside the impact area may be preserved in an exclusion zone—a fenced area where construction equipment and personnel are not permitted. Together, avoidance and use of exclusion zones ensures the maximum *in-situ* preservation of significant cultural resources.

  Where avoidance is infeasible and significant cultural resources are jeopardized by an individual improvement project, one or a combination of the following measures will be implemented:

  - Data recovery excavation;
  - Additional analysis of existing collections;
  - Additional archival/historical research;
  - Photographic documentation; and
  - Archaeological monitoring during construction, followed by data recovery excavation or other appropriate measures if significant archaeological remains are exposed.

  Final decisions regarding impact mitigation will be made in consultation among the individual improvement project proponent, regulatory agencies, technical specialists, and other interested parties. If data recovery excavation is the recommended mitigation, then the EIR/EIS must include a data recovery plan. Data recovery will be supervised by appropriately qualified specialists meeting the Secretary of Interior's Professional Qualifications Standards (FR 190: 44740–44741). Artifacts and other remains collected from the field, along with field records and other documentation, will be curated at the Museum of Anthropology, California State University, Bakersfield, or another institution capable of providing secure, long-term storage, care, and access to the public.

  It should be noted that photographic documentation or other records of historical buildings or structures prepared to the standards of the Historic American Building Survey or Historic American Engineering Record (commonly referred to as HABS/HAER standards) may constitute appropriate treatment of effects according to federal regulations, but may not mitigate individual improvement project impacts to a level of less than significant according to CEQA standards and its defining case law.

2. When a construction activity could significantly disturb soils or geologic formations in areas identified as having a moderate to high potential to support paleontological resources, a qualified researcher must be stationed on-site to observe during excavation operations and recover scientifically valuable specimens. As part of this mitigation, the following actions should be taken:

- A certified paleontologist shall be retained (or required to be retained) by the project implementing agency prior to construction to establish procedures for surveillance and the preconstruction salvage of exposed resources if fossil bearing sediments have the potential to be impacted.
- The monitor shall provide preconstruction coordination with contractors, oversee original cutting in previously undisturbed areas of sensitive formations, halt or redirect construction activities as appropriate to allow recovery of newly discovered fossil remains, and oversee fossil salvage operations and reporting.
- This measure shall be placed as a condition on all plans where excavation and earthmoving activity is proposed in a geologic unit having a moderate or high potential for containing fossils.
- Excavations of paleontological resources should be overseen by the qualified paleontologist and the paleontological resources given to a local agency, or other applicable institution, where they could be displayed or used for research.

Where practicable, routes and project designs that would permanently alter unique geologic features shall be avoided.

3. The cumulative impacts to cultural resources, due to the forecast growth and development associated with the 2011 RTP, would be mitigated using the same measures detailed for Impacts 3.6.1 and 3.6.2, in addition to the following measure.

   - Future impacts to cultural resources shall be minimized through cooperation and information sharing between the implementation agency and affected resource agencies.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies. (Caltrans and local agencies).

When Mitigation Measures are to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

Geology/Soils

3.7 Mitigation

1. Seismic Mitigation

   - Individual improvement project structures will be built by responsible agencies to the seismic standards contained in the most recent edition of the Uniform Building Code (UBC).

   - Implementing agencies will ensure that improvement projects located within or across active fault zones comply with design requirements, published by the CGS, as well as local, regional, state, and federal design criteria for construction of projects in seismic areas.

   The implementing agencies will guarantee that geotechnical analysis is conducted within construction areas to establish soil types and local faulting prior to individual improvement project design preparation.

2. Slope failure, long-term erosion, and unique geologic features mitigation:

   - The implementing agencies will ensure that individual improvement project designs provide adequate slope drainage and appropriate landscaping to minimize the occurrence of slope instability and erosion.

   - Design features will include measures to reduce erosion from storm water.

   - Road cuts will be designed to maximize the potential for revegetation.

   - Implementing agencies will ensure that projects avoid landslide areas and potentially unstable slopes wherever feasible.

   - Where practicable, routes and individual improvement project designs that would permanently alter unique geologic features will be avoided.

3. Subsidence mitigation:

   - Implementing agencies will ensure that geotechnical investigations are conducted by a qualified geologist to identify the potential for subsidence and expansive soils.

   - Recommended corrective measures, such as structural reinforcement and replacing soil with engineered fill, will be implemented in individual improvement project designs.

   - Implementing agencies will ensure that, prior to preparing individual improvement project designs, new and abandoned wells are identified within construction areas to ensure the stability of nearby soils.

4. Seismic mitigation:

   - Implementing agencies shall ensure that projects are designed in accordance with county and city code requirements for seismic ground shaking. The design of projects shall consider seismicity of the site, soil response at the site, and dynamic characteristics of the structure, in compliance with the appropriate California

Building Code and State of California design standards for construction in or near fault zones, as well as all standard design, grading, and construction practices in order to avoid or reduce geologic hazards.

- Implementing agencies shall ensure that projects located within or across Alquist- Priolo Zones comply with design requirements provided in Special Publication 117, published by the California Geological Survey, as well as relevant local, regional, state, and federal design criteria for construction in seismic areas.

- The project implementing agencies shall ensure that geotechnical analyses from qualified geotechnical experts are conducted within construction areas to ascertain soil types and local faulting prior to preparation of project designs. These investigations would identify areas of potential failure and recommend remedial geotechnical measures to eliminate any problems.

5. Adverse soil mitigation:

   - Improvement projects with significant cuts or fill will include a geotechnical investigation to identify adverse soil conditions and develop recommendations for design and construction that would limit the effects of adverse soil and bedrock conditions.

   - Cut and fill plans will be prepared for all improvement projects where cut and fill will be reburied, so that all fill materials are properly designed, placed, and compacted.

   - Preparation of a detailed erosion control plan will be prepared to limit the effects of soil erosion and water degradation during improvement project construction, in accordance with permit conditions and requirements of the State Water Resources Control Board's Best Management Practices (BMPs), or equally effective measures will be employed.

6. State-owned and State mineral-reserved land mitigation:

   - Where possible, improvement projects will be designed by responsible agencies to limit potential impacts on State-owned or State mineral-reserved lands.

7. Cumulative mitigation:

   Mitigation measures 3.7.1 through 3.7.6 would be applied to this impact in addition to the following measure:

   - Future impacts to geologic resources shall be minimized through cooperation and information sharing between the implementation agency and affected resource agencies.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies. (Caltrans and local agencies).

When Mitigation Measures are to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

Hazards & Hazardous Materials

1.8 Mitigation

1. The following mitigation measure is included to ensure compliance with applicable regulations.

    - The implementation agency shall comply with all applicable laws, regulations, and health and safety standards set forth by federal, state, and local authorities that regulate the proper handling of such materials and their containers to the routine transport, use, and disposal of hazardous materials does not create a significant hazard to the public or the environment.

2. Release of hazardous materials mitigation:

    - Implementing agencies shall encourage the USDOT, the Office of Emergency Services, and Caltrans to continue to conduct driver safety training programs and encourage the private sector to continue conducting driver safety training.
    - Implementing agencies shall encourage the USDOT and the CHP to continue to enforce speed limits and existing regulations governing goods movement and hazardous materials transportation.

3. Contaminated sites mitigation:

    - Prior to approval of any RTP project, the project implementation agency shall consult all known databases of contaminated sites and undertake a standard Phase 1 Environmental Site Assessment in the process of planning, environmental clearance, and construction for projects included in the 2011 RTP. If contamination is found the implementing agency shall coordinate clean up and/or maintenance activities.

    - Where contaminated sites are identified, the project implementation agency shall develop appropriate mitigation measures to assure that worker and public exposure is minimized to an acceptable level and to prevent any further environmental contamination as a result of construction.

    - Local agencies should contact the Chevron Environmental Management Company (CEMC) to determine whether an improvement project may be in the vicinity of the Tidewater Oil Company or Standard Oil Company historical pipeline alignments. A map of the alignments is provided in Appendix B of this SEIR.

4. Cumulative mitigation:

    - Mitigation Measures 3.8.1 through 3.8.3 as implemented by responsible agencies and private developers would address this impact.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies. (Caltrans and local agencies).

When Mitigation Measures are to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

Hydrology/Water Quality

3.9 Mitigation

1. Water quality mitigation::

   - Improvement projects along existing facilities will include upgrades to storm water drainage facilities to accommodate increased runoff volumes. These upgrades may include the construction of detention basins or structures that will delay peak flows and reduce velocity.

2. Groundwater mitigation:

   - Transportation network improvements will comply with local, state and federal floodplain regulations. Proposed transportation improvements will be engineered by responsible agencies to accommodate storm drainage flow.

   - Responsible agencies should ensure that operational best management practices for street cleaning, litter control, and catch basin cleaning are provided to prevent water quality degradation. Responsible agencies implementing projects requiring continual water removal facilities will provide monitoring systems including long-term administrative procedures to ensure proper operations for the life of the improvement project.

3. Flood hazards mitigation:

   - Prior to construction, and when a potential drainage issue is known, a drainage study will be conducted by responsible agencies for new capacity-increasing projects. Drainage systems will be designed to maximize the use of detention basins, vegetated areas, and velocity dissipaters to reduce peak flows where possible. Transportation improvements will comply with federal, state and local regulations regarding storm water management. State-owned freeways must comply with Storm Water Discharge NPDES permit for Caltrans facilities.

   - Responsible agencies will ensure that new facilities include water quality control features such as drainage channels, detention basins, and vegetated buffers to prevent pollution of adjacent water resources by runoff.

   - Letters of Map Revision (LOMR) will be prepared and submitted to FEMA (when applicable) by responsible agencies where construction would occur within 100-year floodplains. The LOMR will include revised local base flood elevations for projects constructed within flood-prone areas.

4. Urban and construction runoff mitigation:

   - Improvement projects along existing facilities will include upgrades to storm water drainage facilities to accommodate increased runoff volumes. These upgrades may include the construction of detention basins or structures that will delay peak flows and reduce velocity.

5. Water quality, stormwater infiltration, groundwater recharge, flood hazards, wastewater treatment services, and water demand mitigation: Mitigation Measures 3.9.1 through 3.9.4 shall be applied to all development projects, as feasible, in addition to the following measures:

- Local governments should encourage Low Impact Development and natural spaces that reduce, treat, infiltrate and manage stormwater runoff flows in all new developments.

- Local governments should implement green infrastructure and water-related green building practices through incentives and ordinances. Green building resources include the U.S. Green Building Council's Leadership in Energy and Environmental Design, Green Point Rated Homes, and the California Green Builder Program.

- Local governments should integrate water resources planning with existing greening and revitalization initiatives, such as street greening, tree planting, development and restoration of public parks, and parking lot conversions, to maximize benefits and share costs.

- Developers, local governments, and water agencies should maximize permeable surface area in existing urbanized areas to protect water quality, reduce flooding, allow for groundwater recharge, and preserve wildlife habitat. New impervious surfaces should be minimized to the greatest extent possible, including the use of in-lieu fees and off-site mitigation.

- Future impacts to water quality shall be avoided through cooperative planning, information sharing, and comprehensive pollution control measure development.

- Local jurisdictions and water agencies are encouraged to continue regional-scale planning for improved stormwater management and groundwater recharge. Future adverse impacts shall be avoided through cooperative planning, information sharing, and comprehensive implementation efforts.
- Local governments should prevent development in flood hazard areas that do not have appropriate protections, especially in alluvial fan areas of the region.

- Local jurisdictions should encourage new development and industry to locate in those service areas with existing wastewater infrastructure and treatment capacity, making greater use of those facilities prior to incurring new infrastructure costs.

- Wastewater treatment agencies are encouraged to have expansion plans, approvals and financing in place once their facilities are operating at 80 percent of capacity.

- Local jurisdictions should promote reduced wastewater system demand by: designing wastewater systems to minimize inflow and increase upstream treatment and infiltration to the extent feasible, reducing overall source water generation by domestic and industrial users, deferring development approvals for industries that generate high volumes of wastewater until wastewater agencies have expanded capacity.

- Project developers and agencies should consider potential climate change hydrology and attendant impacts on available water supplies and reliability in the process of creating or modifying systems to manage water resources for both year round use and ecosystem health.

- Local water agencies should continue to evaluate future water demands and establish the necessary supply and infrastructure to meet that demand.

- Developers, local governments, and water agencies should include conjunctive use as a water management strategy when feasible.

- Developers and local governments should reduce exterior uses of water in public areas, and should promote reductions in private homes and businesses, by shifting to drought-tolerant native landscape plantings (xeriscaping), using weather-based irrigation systems, educating other public agencies about water use, and installing related water pricing incentives.

- Future impacts to water supply shall be minimized through cooperation, information sharing, and program development.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies. (Caltrans and local agencies).

When Mitigation Measures are to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

Land Use/Planning

3.10 Mitigation

1. The impact on significant agricultural resources will be evaluated as part of the appropriate improvement project-specific environmental review. Mitigation measures will be identified to minimize impacts. Implementation agencies will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with all mitigation measures.

    - Individual projects will be consistent with local land use plans and policies that designate areas for urban land use and preserve agricultural lands that support the economic viability of agricultural activities.

    - Prior to final approval of each individual improvement project, the implementing agency will conduct the appropriate project-specific environmental review, including consideration of potential land use impacts.

1.9 Impacts to sensitive receptors will be evaluated as part of the appropriate project-specific environmental review, and mitigation measures will be identified to minimize impacts. Implementation agencies will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with all mitigation measures.

    - Prior to commencing construction activities on individual projects, project implementation agencies will comply with applicable federal, state and applicable city and county land use plans, policies, and regulations.

    - Prior to commencing construction activities with individual projects, implementation agencies will obtain necessary local permits and meet conditions for approval from applicable cities and counties.

    - Prior to final approval of each individual improvement project, the implementing agency will conduct the appropriate project-specific environmental review, including consideration of potential land use impacts.

    - Potential significant impacts to land uses will be mitigated.

1.10 The impact on open space and community recreation areas will be evaluated as part of the appropriate individual improvement project-specific environmental review and mitigation measures will be identified to minimize impacts. Implementation agencies will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with all mitigation measures.

    - Implementation agencies will ensure that projects are consistent with federal, state, and local plans that preserve open space and recreation.

    - Implementation agencies will identify open space and recreation areas that could be preserved and will include mitigation measures (such as dedication or payment of in-lieu fees) for the loss of open space.

    - Prior to final approval of each individual improvement project, the implementing agency will conduct the appropriate project-specific environmental review, including consideration of loss of open space and recreation.

    - Potential significant impacts to open space will be mitigated.

- For projects that require approval or funding by the U.S. Department of Transportation, implementation agencies will comply with Section 4(f) of the U.S. Department of Transportation Act.

1.11 The impact on significant agricultural resources will be evaluated as part of the appropriate individual improvement project-specific environmental review, and mitigation measures will be identified to minimize impacts. Implementation agencies will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with all mitigation measures.

- Individual projects will be consistent with federal, state, and local policies that preserve agricultural lands and support the economic viability of agricultural activities, as well as policies that provide compensation for property owners if preservation is not feasible.

- For projects in agricultural areas, individual improvement project implementation agencies will contact the California Department of Conservation and the County Agricultural Commissioner's office to identify the location of prime farmlands and lands that support crops considered valuable to the local or regional economy.

- Prior to final approval of each individual improvement project, the implementing agency will establish conservation easement programs to mitigate impacts to prime farmland.

- Prior to final approval of each individual improvement project, the implementing agency will avoid impacts to prime farmlands or farmlands that support crops considered valuable to the local or regional economy.

- Prior to final approval of each individual improvement project, the implementing agency will encourage enrollments of agricultural lands in the Williamson Act.

1.12 The mitigation measures listed above for Impacts 3.10.1 through 3.10.5 would be applied as mitigation for this impact. In addition, the following measure would apply.

- Regional planning efforts will be used to build a consensus in the region to support changes in land use to accommodate future population growth while maintaining the quality of life in the region.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies. (Caltrans and local agencies).

When Mitigation Measures are to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

3.11 Mitigation

1. As part of project-specific environmental review, a detailed evaluation of noise impacts will be undertaken. Project-specific mitigation measures will be identified, as necessary. All mitigation measures will be included in project-level analysis, as appropriate. The implementing agency or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with mitigation measures.

   - Implementing agencies will comply with all local sound control and noise level rules, procedures, regulations, and ordinances.

   - Implementing agencies will limit the hours of construction to between 6:00 a.m. and 8:00 p.m. on Monday through Friday and between 7:00 a.m. and 8:00 p.m. on weekends.

   - Equipment and trucks used for individual improvement project construction will utilize the best available noise control techniques (including mufflers, use of intake silencers, ducts, engine enclosures and acoustically attenuating shields or shrouds) in order to minimize construction noise impacts.

   - Impact equipment (e.g., jackhammers, pavement breakers, and rock drills) used for individual improvement project construction will be hydraulically or electrical powered wherever feasible to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatically powered tools is unavoidable, an exhaust muffler on the compressed air exhaust will be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves will be used where feasible, and this could achieve a reduction of 5 dBA. Quieter procedures will be used such as drilling rather than impact equipment whenever feasible.

   - Implementing agencies will ensure that stationary noise sources will be located as far from sensitive receptors as possible. If they must be located near existing receptors, they will be adequately muffled.

   - Implementing agencies will designate a complaint coordinator responsible for responding to noise complaints received during the construction phase. The name and phone number of the complaint coordinator will be conspicuously posted at construction areas and on all advanced notifications. This person will be responsible for taking steps required to resolve complaints, including periodic noise monitoring, if necessary.

   - Noise generated from any rock-crushing or screening operations performed within 3,000 feet of any occupied residence will be mitigated by the individual improvement project proponent by strategic placement of material stockpiles between the operation and the affected dwelling or by other means approved by the local jurisdiction.

   - Implementing agencies will direct contractors to implement appropriate additional noise mitigation measures including, but not limited to, changing the location of stationary construction equipment, shutting off idling equipment, rescheduling construction activity, notifying adjacent residents in advance of construction work, and installing acoustic barriers around stationary construction noise sources to comply with local noise control requirements.

- Implementing agencies will implement use of portable barriers during construction of subsurface barriers, debris basins, and storm water drainage facilities.

- No pile-driving or blasting operations will be performed within 3,000 feet of an occupied residence on Sundays, legal holidays, or between the hours of 8:00 p.m. and 8:00 a.m. on other days. Any variance from this condition will be obtained from the individual improvement project proponent and must be approved by the local jurisdiction.

- Wherever possible, sonic or vibratory pile drivers will be used instead of impact pile drivers, (sonic pile drivers are only effective in some soils). If sonic or vibratory pile drivers are not feasible, acoustical enclosures will be provided as necessary to ensure that pile-driving noise does not exceed speech interference criterion at the closest sensitive receptor.

- In residential areas, pile driving will be limited to daytime working hours.

- Engine and pneumatic exhaust controls on pile drivers will be required as necessary to ensure that exhaust noise from pile driver engines are minimized to the extent feasible.

- Where feasible, pile holes will be pre-drilled to reduce potential noise and vibration impacts.

2. Noise-sensitive land use mitigation

- As part of the appropriate environmental review of each project, a project specific noise evaluation shall be conducted and appropriate mitigation identified and implemented.

- Project implementation agencies shall employ, where their jurisdictional authority permits, land use planning measures, such as zoning, restrictions on development, site design, and use of buffers to ensure that future development is compatible with adjacent transportation facilities.

- Project implementation agencies shall, to the extent feasible and practicable, maximize the distance between noise-sensitive land uses and new roadway lanes, roadways, rail lines, transit centers, park-and-ride lots, and other new noise generating facilities.

- Project implementation agencies shall construct sound reducing barriers between noise sources and noise-sensitive land uses. Sound barriers can be in the form of earth-berms or soundwalls. Constructing roadways so as appropriate and feasible that they are depressed below-grade of the existing sensitive land uses also creates an effective barrier between the roadway and sensitive receptors.

- Project implementation agencies shall, to the extent feasible and practicable, improve the acoustical insulation of dwelling units where setbacks and sound barriers do not sufficiently reduce noise.

- The project implementation agencies shall implement, to the extent feasible and practicable, speed limits and limits on hours of operation of rail and transit systems, where such limits may reduce noise impacts.

- Passenger stations, central maintenance facilities, decentralized maintenance facilities, and electric substations should be located away from sensitive receptors.

3. Mitigation measures intended to reduce the noise impacts on sensitive receptors are part of the 2011 RTP. These include: site design, buffers, soundwalls, etc.

   Further reduction in noise impacts would be obtained through the implementation of the measures described in 3.11.1 and 3.11.2.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies. (Caltrans and local agencies).

When Mitigation Measures are to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

Population/Housing

3.12 Mitigation

1. As part of the appropriate project-specific environmental review, population and job displacement impacts will be evaluated. Mitigation measures will be identified to minimize impacts. Implementation agencies will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with all mitigation measures.

    - For projects with the potential to displace homes or businesses, project implementation agencies will evaluate alternate route alignments and transportation facilities that minimize the displacement of homes and businesses. An iterative design and impact analysis would help where impacts to persons or businesses are involved. Potential impacts will be minimized to the extent feasible. If possible, existing rights-of-way should be used.

    - Implementation agencies will identify businesses and residences to be displaced. As required by law, relocation and assistance will be provided to displaced residents and businesses, in accordance with the federal Uniform Relocation and Real Property Acquisition Policies Act of 1970 and the State of California Relocation Assistance Act, as well as any applicable City and County policies.

    - Implementation agencies will develop a construction schedule that minimizes potential neighborhood deterioration from protracted waiting periods between right-of-way acquisition and construction.

2. As part of the appropriate project-specific environmental review, community disruption or division will be evaluated. Mitigation measures will be identified to minimize impacts. Implementation agencies will be responsible for ensuring adherence to the mitigation measures prior to construction. Kern COG will be provided with documentation indicating compliance with all mitigation measures.

    - Implementation agencies will design new transportation facilities that protect access to existing community facilities. During the design phase of the individual improvement project, community amenities and facilities should be identified and access to them considered in the design of the individual improvement project.

    - Implementation agencies will design roadway improvements, in a manner that minimizes barriers to pedestrians and bicyclists. During the design phase, pedestrian and bicycle routes will be determined that permit easy connections to community facilities nearby in order not to divide the communities.

2. The mitigation measures listed above for Impacts 3.12.1 and 3.12.2 in the Draft SEIR would be applied as mitigation for this impact. In addition, the following measure would apply:

    - Regional planning efforts will be used to build a consensus in the region to support changes in population, housing and employment to accommodate future growth while maintaining the quality of life in the region.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies. (Caltrans and local agencies).

When Mitigation Measures are to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

3.13 Mitigation

1. As part of individual improvement project-specific environmental review, implementation agencies will evaluate the impacts on police, fire, and medical services in the County. Appropriate mitigation measures should be identified for all impacts. The implementation of projects by agencies or local jurisdiction will be responsible for ensuring adherence to the mitigation measures. Kern COG will be provided with documentation indicating compliance with mitigation measures.

   - Prior to construction, the implementation agency will ensure that all necessary local and state road and railroad encroachment permits are obtained. The implementation agency also will comply with all applicable conditions of approval. As deemed necessary by the governing jurisdiction, the road encroachment permits may require the contractor to prepare a traffic control plan in accordance with professional engineering standards prior to construction. Traffic control plans should include the following requirements:

     - Identify all roadway locations where special construction techniques (e.g., directional drilling or night construction) would be used to minimize impacts to traffic flow;
     - Develop circulation and detour plans to minimize impacts to local street circulation. This may include the use of signing and flagging to guide vehicles through and/or around the construction zone;
     - Schedule truck trips outside of peak morning and evening commute hours;
     - Limit lane closures during peak hours to the extent possible;
     - Use haul routes, minimizing truck traffic on local roadways, to the extent possible;
     - Include detours for bicycles and pedestrians in all areas potentially affected by individual improvement project construction;
     - Install traffic control devices as specified in the California Department of Transportation Manual of Traffic Controls for Construction and Maintenance Work Zones;
     - Develop and implement access plans for highly sensitive land uses such as police and fire stations, transit stations, hospitals, and schools. Access plans will be developed with the facility owner or administrator. To minimize disruption of emergency vehicle access, affected jurisdictions will be asked to identify detours for emergency vehicles, which will then be posted by the contractor. The facility owner or operator will be notified in advance of the timing, location, and duration of construction activities and the locations of detours and lane closures;
     - Store construction materials only in designated areas; and
     - Coordinate with local transit agencies for temporary relocation of routes or bus stops in work zones, as necessary.

   - Projects requiring police protection, fire service, and emergency medical service will coordinate with the local fire department and police department to ensure that the existing public services and utilities will be able to handle the increase in demand for their services. If the current levels of service at the individual improvement project site are found to be inadequate, infrastructure improvements and personnel requirements for the appropriate public service will be identified in each individual improvement project's CEQA documentation.

   - The growth inducing potential of individual projects will be carefully evaluated so that the full implications of the individual improvement project are understood. Individual environmental documents will quantify indirect impacts (growth that could be facilitated or induced) on public services and utilities. Lead and responsible agencies should then make any necessary adjustments to the applicable General Plan.

2. As part of individual improvement project-specific environmental review, implementation agencies will evaluate the impacts on demand for solid waste, wastewater, and potable water services in the County. Appropriate mitigation measures should be identified for all impacts. The implementation agencies or local jurisdiction will be responsible for ensuring adherence to the mitigation measures. Kern COG will be provided with documentation indicating compliance to mitigation measures.

   - Projects requiring wastewater service, solid waste collection, or potable water service will coordinate with the local public works department to ensure that the existing public services and utilities would be able to handle the increase. If the current infrastructure servicing the individual improvement project site is found to be inadequate, infrastructure improvements for the appropriate public service utility will be identified in each individual improvement project's CEQA documentation.

   - Reclaimed water will be used for landscaping purposes instead of potable water wherever feasible.

   - Each of the proposed projects will comply with applicable regulations related to solid waste disposal.

   - The construction contractor will work with the County Recycling Coordinator to ensure that source reduction techniques and recycling measures are incorporated into individual improvement project construction.

   - The amount of solid waste generated during construction will be estimated prior to construction, and appropriate disposal sites will be identified and utilized.

3. As part of individual improvement project environmental review, individual agencies will evaluate the impacts resulting from soil accumulation during construction of the projects. Appropriate mitigation measures will be identified for all impacts. The implementation agencies or local jurisdiction will be responsible for ensuring adherence to the mitigation measures. Kern COG will be provided with documentation indicating compliance with mitigation measures.

   Implement appropriate measures, such as the washing of construction vehicles undercarriages before leaving the construction site or increasing the use of street cleaning machines, to reduce the amount of soil on local roadways as a result of construction.

4. Underground utility mitigation:

   - As part of individual improvement project environmental review, implementation agencies will evaluate the impacts resulting from the potential for severing underground utility lines during construction of the projects. Appropriate mitigation measures will be identified for all impacts. The implementation agencies or local jurisdiction will be responsible for ensuring adherence to mitigation measures. Kern COG will be provided with documentation indicating compliance with mitigation measures.

   - Prior to construction, the implementing agency or contractor will identify the locations of existing utility lines. All known utility lines will be avoided during construction.

5. Cumulative mitigation:

   - The growth inducing potential of individual projects shall be carefully evaluated so that the full implications of the projects are understood. Individual environmental documents shall quantify indirect impacts (growth that could be facilitated or induced) on public services and utilities to the extent feasible.

- The California Integrated Waste Management Board shall continue to enforce solid waste diversion mandates that are enacted by the Legislature.

- Local jurisdictions shall continue to adopt programs to comply with state solid waste diversion rate mandates and, where possible, shall encourage further recycling to exceed these rates.

- Local jurisdictions shall implement or expand city or county-wide recycling and composting programs for residents and businesses. This could include extending the types of recycling services offered (e.g., to include food and green waste recycling) and providing public education and publicity about recycling services.

- Project implementation agencies shall coordinate regional approaches and strategic siting of waste management facilities.

- Project implementation agencies shall prioritize siting of new solid waste management facilities including recycling, composting, and conversion technology facilities in conjunction with existing waste management or material recovery facilities.

- Project implementation agencies shall increase programs to educate the public and increase awareness of reuse, recycling, composting, and green building benefits and raise consumer education issues at the county and city level, as well as at local school districts and education facilities.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies. (Caltrans and local agencies).

When Mitigation Measures are to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

Transportation/Traffic

3.14 Mitigation

1. Measures intended to reduce vehicle miles traveled and reduce congestion are part of the 2011 RTP. These include: increasing rideshare and work-at-home opportunities to reduce demand on the transportation system, investments in non-motorized transportation and maximizing the benefits of the land use/transportation connection, other Travel Demand Management measures described in the 2011 RTP and in local agency General Plans, and key transportation investments targeted to reduce congestion levels and improve LOS.

2. As part of individual improvement project environmental review, individual agencies will consider impacts and plan for grade separations along major thoroughfares, identify to the extent feasible, improvements to existing at-grade highway-rail crossings caused by increases in traffic volumes, and provide, to the extent possible, appropriate fencing to limit the access of trespassers onto the railroad right-of-way. The implementation agencies or local jurisdiction will be responsible for ensuring adherence to the mitigation measure. Kern COG will be provided with documentation indicating compliance with the mitigation measure.

Energy & Energy Conservation

3.15 Mitigation

1. Project implementation agencies shall review energy impacts as part of any CEQA-required project-level environmental analysis and specify appropriate mitigation measures for any identified energy impacts.

2. During the design and approval of transportation improvements implemented under the proposed 2011 RTP, the following energy efficiency measures shall be incorporated when applicable:

   - The design or purchase of any lighting fixtures including but not limited to lighting at transit stations, arterials or freeways, and parking structures/lots shall achieve energy reductions beyond an estimated baseline energy use for such lighting.
   - LED technology shall be used for all new or replaced traffic lights, rail signals, and other features compatible with LED technology.

3. Local agencies should consider various best practices and technological improvements that can reduce the consumption of fossil fuels such as:

   - Expanding light-duty vehicle retirement programs
   - Increasing commercial vehicle fleet modernization
   - Implementing driver training modules on fuel consumption
   - Replacing gasoline powered mowers with electric mowers
   - Reducing idling from construction equipment
   - Incentivizing alternative fuel vehicles and equipment
   - Developing infrastructure for alternative fueled vehicles
   - Implementing truck idling rules, devices, and truck-stop electrification
   - Requiring electric truck refrigerator units
   - Reducing locomotives fuel use
   - Modernizing older off-road engines and equipment
   - Encouraging freight mode shift
   - Limit use and develop fleet rules for construction equipment
   - Requiring zero-emission forklifts

4. Local agencies should include energy analyses in environmental documentation and general plans with the goal of conserving energy through the wise and efficient use of energy. For any identified energy impacts, appropriate mitigation measures should be developed and monitored. Kern COG recommends the use of Appendix F, Energy Conservation, of the *CEQA Guidelines.*

5. Local agencies should streamline permitting and provide public information to facilitate accelerated construction of solar and wind power.

6. Local agencies should adopt a "Green Building Program" to promote green building standards. Green buildings can reduce local environmental impacts, regional air pollutant emissions and global greenhouse gas emissions. Green building standards involve everything from energy efficiency, usage of renewable resources and reduced waste generation and water usage. For example, water-related energy use consumes 19 percent of the state's electricity.

The residential sector accounts for 48 percent of both the electricity and natural gas consumption associated with urban water use. While interest in green buildings has been growing for some time, cost has been a main consideration as it may cost more up front to provide energy-efficient building components and systems. Initial costs can be a hurdle even when the installed systems will save money over the life of the building. Energy efficiency measures can reduce initial costs, for example, by reducing the need for over-sized air conditioners to keep buildings comfortable. Undertaking a more comprehensive design approach to building sustainability can also save initial costs through reuse of building materials and other means.

A comprehensive study of the value of green building savings is the 2003 report to California's Sustainable Building Task Force. In the words of the report: "While the environmental and human health benefits of green building have been widely recognized, this comprehensive report confirms that minimal increases in upfront costs of about 2% to support green design would, on average, result in life cycle savings of 20% of total construction costs -- more than ten times the initial investment. For example, an initial upfront investment of up to $100,000 to incorporate green building features into a $5 million project would result in a savings of $1 million in today's dollars over the life of the building."

7. Local governments should alter zoning to improve jobs/housing balance, create communities where people live closer to work, and bike, walk, and take transit as a substitute for personal auto travel. Creating walkable, transit oriented nodes would generally reduce energy use and greenhouse gas emissions. Residential energy use (electricity and natural gas) accounts for 14 percent of California's greenhouse gas emissions. It is estimated that households in transit-oriented developments drive 45 percent less than residents in auto-dependent neighborhoods. In addition, mixed land uses (i.e., residential developments near work places, restaurants, and shopping centers) with access to public transportation have been shown to save consumers up to 512 gallons of gasoline per year. Furthermore, studies have shown that the type of housing (such as multi-family) and the size of a house have strong relationships to residential energy use. Residents of single-family detached housing consume over 20 percent more primary energy than those of multifamily housing and 9 percent more than those of single-family attached housing.

8. Kern COG shall work with its member agencies to increase the number of AFVs (i.e., vehicles not powered strictly by gasoline or diesel fuel) both in municipally owned vehicles, as well as those owned by franchisees of these cities, such as trash haulers, green waste haulers, street sweepers, and curbside recyclable haulers.

9. Bid solicitations for construction of projects proposed in the 2011 RTP and subsequent RTP updates shall preference the use of alternative formulations of cement and asphalt with reduced GHG emissions to the extent that such cement and asphalt formulations are available at a reasonable cost in the marketplace. Solicitations shall also preference the recycling of construction waste and debris if market conditions permit.

10. Kern COG shall continue to develop, in coordination with the California Air Resources Board, a data and information collection and analysis system that provides an understanding of the energy demand and greenhouse gas emissions in the Kern region.

11. All mitigation measures listed in Chapter 3, Section 3.5.1, are incorporated by reference and shall be implemented by implementing agencies to address energy conservation impacts.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies. (Caltrans and local agencies).

When Mitigation Measures are to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

SUMMARY OF OVERRIDING CONSIDERATIONS & UNAVOIDABLE ENVIRONMENTAL IMPACTS

The following section provides a summary of the Statement of Overriding Considerations and Unavoidable Environmental Impacts associated with the 2011 RTP and approved as part of the 2011 RTP SEIR process.

Statement of Overriding Considerations

Based on information set forth in the 2011 RTP Draft and Final EIR, and these findings of fact, Kern COG recognized that approval of the 2011 RTP, even with implementation of all the feasible mitigation measures, may result in significant effects on the environment. In compliance with CEQA, Kern COG found that the unavoidable significant adverse effects of the Project (2011 RTP) are overridden by the benefits of the Project and the considerations described below and, therefore, made and adopted the following Overriding Considerations:

- The requirement for updates to the RTP every four (4) years, which provides for the identification of transportation modes to address population and employment growth, is required by State Law and sound local planning practice, and is an overriding concern.

- The specific need to provide necessary, feasible and sustainable transportation system improvements within the region is an overriding concern.

- The need to provide choice in the availability of transportation modes for County residents as a means to avoid significant delay and congestion, which may indirectly harm businesses and residents that depend upon a viable transportation system, is an overriding concern.

- Because there is no alternative other than the "No Build", "No Project" (2011 Regional Transportation Plan), and VMT Reduction Alternatives to converting some prime farmland for expansion of the circulation system, the need for such conversion is an overriding concern.

- While the individual improvement projects will not result in emissions beyond those allowed through the conformity process, and construction and hot spot emission impacts can be mitigated or are not found to be significant, the fact that the Valley continues to be nonattainment for volatile organic compounds, nitrogen oxides, and PM emissions, is an overriding concern.

- Because there is no alternative other than "No Build", "No Project", and VMT Reduction Alternatives to the loss of some biological resources for expansion of the circulation system, the loss of such resources is an overriding concern.

- The 2011 RTP balances the need to preserve valuable agricultural and biological resources with the region's need to provide a viable transportation system to accommodate anticipated population and employment growth and the related increased need for employment opportunities and municipal revenue. This planning balance is an overriding concern.

- Regional benefits associated with implementation of the 2011 RTP (reduced vehicular emissions, reduced congestion, reduced travel time, reduced vehicle miles traveled and improved mobility), will result from the implementation of planned improvement projects, which outweigh the potentially unavoidable localized impacts to land use development that may result from the individual improvement projects.

- Implementation of the 2011 RTP will result in increased unavoidable noise levels as a result of expansion of the planned transportation system, but the specific need to provide necessary, feasible and sustainable transportation system improvements within the region that supports planned growth and development, is an overriding concern.

- Implementation of the 2011 RTP would result in positive impacts on public services; however, long-term maintenance of various transportation modes including streets and highways is an overriding concern.

- Regional and localized benefits associated with implementation of the 2011 RTP (reduced vehicular emissions, reduced congestion, reduced travel time, reduced vehicle miles traveled and improved mobility), that will result from the implementation of planned improvement projects, outweigh the potentially unavoidable impacts associated with individual or localized improvement projects and other projects identified in the Project alternatives. These other alternatives will result in a greater number of Level of Service (LOS) deficiencies and infeasible transportation projects that will not result in further benefits beyond implementation of the 2011 RTP.

Based on substantial evidence in the public record, Kern COG found that, for the reasons set forth above, the economic, social and other consideration of the individual improvement projects outweigh the unavoidable agricultural, biological, land use/planning, noise, and transportation/circulation impacts identified in the SEIR. First, the individual improvement projects identified in the 2011 RTP are required to meet travel demand of residents and businesses through to the year 2035. Second, the planned transportation improvements will enhance continued economic growth in the region. Third, the planned improvements will reduce levels of vehicular emissions and LOS deficiencies compared to the other project alternatives. Fourth, appropriate and achievable mitigation measures have been proposed, which are within Kern COG's and its member agencies' jurisdiction to mitigate or avoid the significant environmental effects identified in the SEIRs.

Significant Unavoidable Adverse Environmental Impacts

- Impact 3.1.1: Construction and implementation of individual projects could potentially impede or block views of scenic resources as seen from the transportation facility or from the surrounding area.

- Impact 3.1.2: Construction and implementation of the projects could alter the appearance of scenic resources along or near designated scenic highways and vista points.

- Impact 3.1.4: Construction and implementation of individual projects could potentially create a new source of substantial light or glare that would affect day or nighttime views of scenic resources as seen from the transportation facility or from the surrounding area.

- Impact 3.1.5: Kern County will experience significant growth and development by 2035. The 2011 RTP influences the pattern of this development, by increasing mobility and including transportation measures. At the regional scale,

the 2011 RTP's contribution to impacts on the overall visual character of the existing landscape setting would be cumulatively significant.

- Impact 3.2.1: Individual improvement projects in the Plan could have significant impacts on land use patterns, potentially causing land use growth and development to occur in areas not previously envisioned for growth and development. This impact could be especially significant on agricultural land uses within the County.

- Impact 3.4.1: The Project includes individual improvement projects that may result in direct removal or degradation of riparian habitat or other sensitive natural communities during construction activities such as grading and grubbing.

- Impact 3.4.2: The Project includes improvements that may result in direct impacts to plant and wildlife species including rare, threatened and/or endangered species during construction and operation of the proposed transportation facilities through the removal of native habitat.

- Impact 3.4.3: The Project includes improvements that may result in indirect impacts to plant and wildlife species including rare, threatened and/or endangered species during the construction and operation through edge effects such as noise, lighting and visual deterrents.

- Impact 3.4.4: The Project includes individual improvement projects that would result in temporary and permanent impacts to terrestrial and aquatic wildlife movement.

- Impact 3.4.6: The 2011 RTP would potentially increase siltation of streams and other water resources from exposures of erodible soils during construction activities.

- Impact 3.4.7: Growth and development in Kern County will increase substantially by 2035. The 2011 RTP, by increasing mobility and including transportation measures, influences the pattern of this growth and development.

- Impact 3.5.1 & 3.5.2: Increased Transportation GHG Emissions May Cause Climate Change and based upon analysis conducted by the IPCC, climate change is a significant cumulative impact, given the ramifications for air quality, climate, public health, water resources, flooding, sea level, agricultural productivity, and biological resources, among other potential effects.

- Impact 3.6.1: Cultural resources may be encountered during development of projects proposed in the 2011 RTP. These resources may include, but are not limited to, prehistoric and historical archaeological sites, paleontological sites, historical buildings, and structures associated with agriculture, mining, and petroleum development. Properties important to Native American communities and other ethnic groups, including tangible properties possessing intangible traditional cultural values, also may be present. Such resources may exist individually, in groupings of modest size, or in districts covering substantial geographies.

- Impact 3.6.2: Construction activities may impact known paleontological resources.

- Impact 3.6.3: The 2011 RTP's influence on growth contributes to regional impacts to existing historic resources and previously undisturbed and undiscovered cultural resources, as described in Impacts 3.6.1 and 3.6.2 above.

- Impact 3.7.2: Some improvement projects require significant earthwork, increasing potential slope failure and long-term erosion. Earthwork can also alter unique geologic features. Project impacts would be considered significant in some cases.

- Impact 3.7.5: Although the scope of study performed for this EIR evaluation did not include a determination for project-specific liquefaction or seismic settlement potential, it is possible that liquefiable soils or soils susceptible to seismic compaction during ground shaking exist within areas of planned transportation improvement projects. This is a potentially significant impact, which will require analysis as part of subsequent project-specific environmental review.

- Impact 3.7.6: Some street and highway projects may be proposed along alignments that will affect State-owned and State mineral-reserved lands.

- Impact 3.7.7: Given the regional scale and growth-inducing nature of the projects and programs included in the 2011 RTP, the cumulative impacts of the 2011 RTP on geological units and soils as well as the potential exposure to substantial adverse effects to people and property would be significant.

- Impact 3.8.2: The implementation of the 2011 RTP could create a hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment during transportation. Implementation of the 2011 RTP would facilitate the movement of goods, including hazardous materials, through the region. Transportation of goods, in general, and hazardous materials in particular, can thus be expected to increase substantially with implementation of the 2011 RTP.

- Impact 3.9.5: The 2011 RTP, by increasing mobility and by including transportation measures, influences the pattern of this development. The 2011 RTP's influence on growth would contribute to the conversion of undeveloped land, resulting in impacts to water quality, stormwater infiltration and groundwater recharge, flood hazard impacts, and wastewater treatment services, and water demand.

- Impact 3.10.1: While the RTP is likely to result in a positive outcome related to supportive land use conditions for alternative forms of transportation such as transit, other projects in the RTP could have significant impacts on land use patterns, potentially causing land use growth and development to occur in areas not previously envisioned for growth and development. This impact could be especially significant on agricultural land uses within the County.

- Impact 3.10.2: Sensitive receptors could be impacted because of the proposed individual improvement projects. These possible impacts would depend on several factors such as the type of individual improvement project proposed for the area, projected land use designation of the area, and duration of proposed construction activities. For the most part, improvement projects involving new systems would pose the greatest potential impacts to sensitive receptors. Specifically, sensitive receptors located in the vicinities of such improvement projects could be significantly impacted by the construction and operation of the proposed projects. Additionally, modification projects would result in short-term construction and long-term impacts to sensitive receptors.

- Impact 3.10.3: Construction and implementation of projects would result in the loss of open space and community recreation areas. This would be considered a potentially significant impact. Pockets of open space vary in size and location throughout the County and within the cities. Open space land uses include agricultural areas, public parks, recreational facilities, and areas planned for such uses.

- Impact 3.10.4: Implementation of the projects and programs contained in the 2011 RTP could potentially result in the disturbance or loss of significant agricultural resources throughout the Kern region. This would be considered a potentially significant impact. The County contains areas designated by the state as Prime Farmland, Unique Farmland, and Farmland of Statewide Importance. These areas are interspersed throughout urban areas or are located in undeveloped portions of the region. Development of highway, arterial and transit projects proposed under the RTP could potentially result in the disturbance or loss of some of these designated areas. Specifically, new projects involving construction would be most likely to result in impacts to these areas.

- Impact 3.10.6: Growth and development in the County will increase substantially by 2035. The 2011 RTP, by increasing mobility and including transportation measures, influences the pattern of this development. The 2011 RTP's influence on growth contributes to regional cumulatively considerable impacts to land use and would change the intensity of land use in some areas.

- Impact 3.11.1: Grading and construction activities associated with the proposed highway, arterial, and transit projects would intermittently and temporarily generate noise levels above ambient background levels. Noise levels in the immediate vicinity of the construction sites would increase substantially sometimes for extended durations. This would be considered a potentially significant impact.

- Impact 3.12.1: The individual improvement projects could affect overall population, housing and employment growth and dispersion in the region from the predicted regional assumptions. Implementation of the proposed mitigation measures is expected to reduce this to a less-than-significant impact. The individual improvement projects are a specific set of transportation improvements together with the long-range transportation plan developed to meet, among other goals, the long-term socio-economic conditions of the region. One of the strategic issues is growth. Between the years, 2005 and 2030, residential population is expected to increase by 58 percent. The recent growth trends in housing, population, and jobs within the region are expected to continue.

- Impact 3.12.2: Noise-sensitive land uses could be exposed to noise in excess of normally acceptable noise levels and/or could experience substantial increases in noise as a result of the operation of expanded or new transportation facilities (i.e., increased traffic resulting from new highways, addition of highway lanes, roadways, ramps, and new transit facilities as well as increased use of existing transit facilities, etc.).

- Impact 3.12.3: Cumulative ambient noise levels could increase in the region to exceed normally acceptable noise levels or have substantial increases in noise as a result of the operation of expanded or new transportation facilities (i.e., increased traffic resulting from new highways, addition of highway lanes, roadways, ramps, and new use of new transit facilities as well as increased use of existing transit facilities, etc.).

- Impact 3.13.1: The Project could affect overall population, housing and employment growth and dispersion in the region from the predicted regional assumptions. Implementation of the proposed mitigation measures is expected to reduce this to a less than significant impact. The Project is a specific set of transportation improvements together with the long-range transportation plan developed to meet, among other goals, the long-term socio-economic conditions of the region. One of the strategic issues is growth. Between the years, 2010 and 2035, residential population is expected to increase by 56 percent. The recent growth trends in housing, population, and jobs within the region are expected to continue.

- Impact 3.12.2: The Project has the potential to disrupt or divide a community by separating community facilities, restricting community access and eliminating community amenities.

- Impact 3.12.3: Growth and development in the County will increase substantially by 2035. The 2011 RTP, by increasing mobility and including transportation measures, influences the pattern of this development. The 2011 RTP's influence on growth contributes to regional cumulatively considerable impacts to population, housing and employment and would change the intensity of land use in some areas.

- Impact 3.13.5: Growth and development in the County will increase substantially by 2035. The 2011 RTP, by increasing mobility and including transportation measures, influences the pattern of this development. The 2011 RTP's influence on growth contributes to regional cumulatively considerable impacts to police and fire and emergency services, solid waste services, and other public services in the County.

- Impact 3.14.1: The list of deficient facilities along the Regionally Significant Roads System with and without the Project indicates that when the individual improvement project improvements are made to the regionally significant street and highway system, LOS conditions within the Kern region will significantly improve. Capacity increasing projects that would improve these deficient levels of service are not included in the Project; however even with mitigation, the 2035 levels of service would still include a number of segments that will operate at deficient levels or at LOS E and F.

APPROVALS REQUIRED

This SEIR Addendum only contains changes necessary to make the previous 2011 RTP SEIR adequate, and the changes made by this SEIR Addendum do not raise important new issues about the significant effects to the environment. This SEIR Addendum need not be circulated for public review; however, Kern COG has decided to release the SEIR Addendum and the 2011 RTP Amendment No.1 for 45-day public review. Ultimately, the SEIR Addendum will be included in or attached to the Final EIR.

Kern COG must decide whether to certify the SEIR Addendum as the EIR for the 2011 RTP Amendment No.1, prior to approving the proposed project.

SOURCES OF INFORMATION USED IN PREPARING THE SEIR ADDENDUM

The Final SEIR for the 2011 RTP is composed of the following documents:

- 2007 Destination 2030 Regional Transportation Plan (RTP), Draft Environmental Impact Report (EIR), March 1, 2007;
- 2007 Destination 2030 RTP, Final EIR, Mitigation Monitoring and Reporting Program, and Statement of Overriding Considerations, May 17, 2007;
- 2007 Destination 2030 RTP Amendment No.1, Addendum EIR, January 15, 2009;
- 2007 Destination 2030 RTP Amendment No.1, January 15, 2009;
- 2007 Destination 2030 RTP Amendment No.2, Addendum EIR, September 17, 2009;
- 2007 Destination 2030 RTP Amendment No.2, September 17, 2009;
- 2011 RTP Draft SEIR, April 30, 2010;
- 2011 RTP Final SEIR, July 15, 2010;
- 2011 RTP, July 15, 2010;
- Kern COG Staff: Mr. Robert Ball, Planning Division Director, Ms. Marilyn Beardslee, Senior Planner, Joe Stromaglia, Senior Planner, and Vincent Liu, Regional Planner III, personal communication, Jan/Feb., 2011; and
- State of California, Office of Planning and Research, California Environmental Quality Act (CEQA) Guidelines, 2010.

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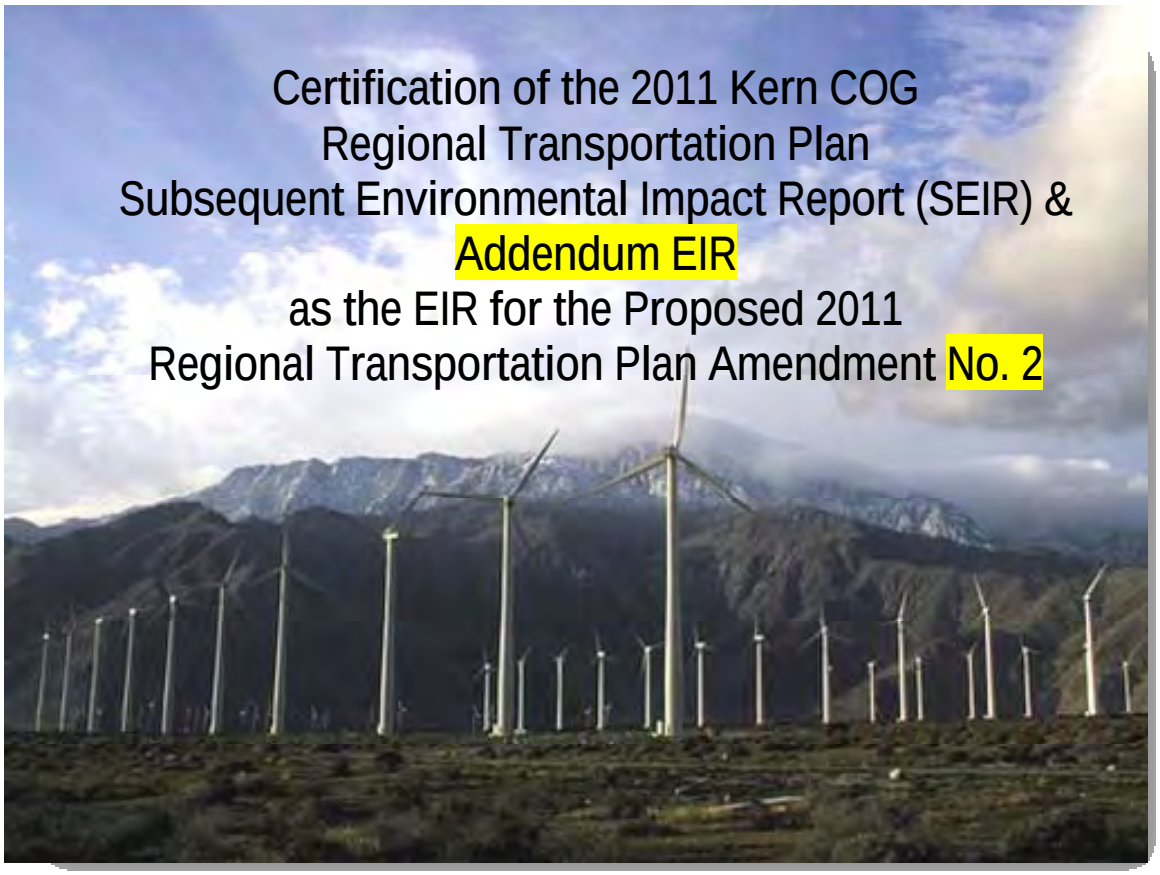
Draft
Addendum No. 2
Environmental Impact Report



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BEFORE THE KERN COUNCIL OF GOVERNMENTS
STATE OF CALIFORNIA, COUNTY OF KERN

RESOLUTION NO. 12-17

In the matter of:

Amendment #10 to the 2011 Federal Transportation Improvement Program, 2011 Regional Transportation Plan Amendment #2 and Addendum #2 to the Subsequent Environmental Impact Report, and Corresponding Conformity Analysis

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WHEREAS, the Kern Council of Governments (Kern COG) is a Regional Transportation Planning Agency and a Metropolitan Planning Organization, pursuant to State and Federal designation; and

WHEREAS, federal planning regulations require Metropolitan Planning Organizations to prepare and adopt a long range Regional Transportation Plan (RTP) for their region; and

WHEREAS, federal planning regulations require that Metropolitan Planning Organizations prepare and adopt a Federal Transportation Improvement Program (FTIP) for their region; and

WHEREAS, Amendment #10 to the 2011 Federal Transportation Improvement Program (2011 FTIP) and 2011 RTP Amendment #2 have been prepared to comply with Federal and State requirements for local projects and through a cooperative process between the Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), the State Department of Transportation (Caltrans), principal elected officials of general purpose local governments and their staffs, and public owner operators of mass transportation services acting through the Kern Council of Governments forum and general public involvement; and

WHEREAS, Amendment #10 to the 2011 FTIP program listing is consistent with: 1) the 2011 Regional Transportation Plan Amendment #2; 2) the 2010 State Transportation Improvement Program; and 3) the Corresponding Conformity Analysis; and

WHEREAS, Amendment #10 to the 2011 FTIP and 2011 RTP Amendment #2 contain the MPO's certification of the transportation planning process assuring that all federal requirements have been fulfilled; and

WHEREAS, Amendment #10 to the 2011 FTIP and 2011 RTP Amendment #2 meet all applicable transportation planning requirements per 23 CFR Part 450.

WHEREAS, projects submitted in Amendment #10 to the 2011 and 2011 RTP Amendment #2 must be financially constrained and the financial plan affirms that funding is available; and

WHEREAS, an Addendum #2 to the Subsequent Environmental Impact Report was prepared to assess the environmental effects of the proposed 2011 RTP Amendment #2; and

WHEREAS, Amendment #10 to the 2011 FTIP and 2011 RTP Amendment #2 include a new Conformity Analysis; and

WHEREAS, Amendment #10 to the 2011 FTIP and 2011 RTP Amendment #2 do not interfere with the timely implementation of the Transportation Control Measures; and

WHEREAS, Amendment #10 to the 2011 FTIP and 2011 RTP Amendment #2 conform to the applicable SIPs; and

WHEREAS, the documents have been widely circulated and reviewed by Kern COG advisory committees representing the technical and management staffs of the member agencies; representatives of other governmental agencies, including State and Federal; representatives of special interest groups; representatives of the private business sector; and residents of Kern County consistent with public participation process adopted by Kern COG; and

WHEREAS, a public hearing was conducted on March 15, 2012 to hear and consider comments on Amendment #10 to the 2011 FTIP and 2011 RTP Amendment #2 and Addendum #2 to the Subsequent EIR and Corresponding Conformity Analysis; and

NOW, THEREFORE, BE IT RESOLVED, that Kern COG adopts Amendment #10 to the 2011 FTIP and 2011 RTP Amendment #2 and Addendum #2 to the Subsequent EIR and Corresponding Conformity Analysis, effective April 30, 2012.

BE IT FURTHER RESOLVED, that the Kern COG finds that Amendment #10 to the 2011 FTIP and 2011 RTP Amendment #2 and Addendum #2 to the Subsequent EIR are in conformity with the requirements of the Federal Clean Air Act Amendments and applicable State Implementation Plans for air quality.

AUTHORIZED AND SIGNED THIS 19TH DAY OF APRIL 2012.

AYES: Couch, Lessenevitch, Mock, Msartin, Morgan, Johnston, Linder, Smith, Wegman, McQuiston, Watson, Bretz

NOES: None

ABSTAIN: None

ABSENT: Tarver, Aguirre, Silver

Steven P. Morgan
Steven Morgan, Chairman
Kern Council of Governments

ATTEST:

I hereby certify that the foregoing is a true copy of a resolution of the Kern Council of Governments duly adopted at a regular meeting thereof held on the 19th day of April 2012.

APR 23 2012

Robert R. Ball, Interim Executive Director
Kern Council of Governments

Date:

Summary of Comments and Responses

As part of the development of the TIP, stakeholders, technical staff, and the general public were given the opportunity to comment. The public review period was held February 13, 2012 to March 28, 2012.

2011 Federal Transportation Improvement Program Amendment No. 10

City of Bakersfield – dated 3/16/12
See letter attached
Cost estimates for the SR 58 Gap Closure project have been revised and include the use of toll credits.

Response:
1. Revision was incorporated into the final document Attachment 1 and Attachment 2.

Conformity Analysis

The language throughout the Attachment 5 documentation was updated with the following: "The 2007 8-Hour Ozone plan (as revised in 2011) was approved by EPA on March 1, 2012 (effective April 30, 2012)."

Conformity Analysis, Regional Transportation Plan Amendment #2, Addendum #2 to the Subsequent Environmental Impact Report, and 2011 Federal Transportation Improvement Program Amendment No. 10

Benham Emami, Engineering Manager II
County of Ventura, Public Works Agency
Transportation Department
Traffic, Advance Planning & Permits Division
See letter attached - dated 2/24/12

Response:
Thank you for your comment. Your agency is included on Kern COG's notification mailing list and will receive notice whenever projects move toward further environmental review and/or construction.

Tricia Maier, Manager
County of Ventura, Resource Management Agency
Planning Programs Section
See letter attached - dated 3/28/12

Response:
Thank you for your comment.

BAKERSFIELD
PUBLIC WORKS DEPARTMENT
1501 TRUXTUN AVENUE
BAKERSFIELD, CALIFORNIA 93301
(661) 326-3724

RAUL M. ROJAS, DIRECTOR • CITY ENGINEER

March 16, 2012

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

ATTN: Robert R. Ball, Interim Executive Director

RE: City of Bakersfield Request to Utilize Toll Credits

Dear Mr. Ball,

The City of Bakersfield requests the Kern Council of Governments pursue the utilization of the Toll Credit Program for the State Route (SR)-58 Gap Closure Project. This project will widen SR-58 from SR-99 to Cottonwood Road. The 2011 Federal Transportation Improvement Program Amendment No. 10 submittal from the City shows $5.62 Million identified as local funds (see attached), which is the non-federal match for this project. The City requests pursuing the use toll credits in-lieu of this non-federal local match.

Should you have any questions or need additional information, please contact Kristina Budak at 326-3700. Thank you for your consideration of this request.

Very Truly Yours,

Raul M. Rojas
Director Public Works

cc: Alan Tandy, City Manager
Ahron Hakimi, Caltrans District 06
Theodore Wright, TRIP Manager

Encl.

	VERSION: 01-13-12 2011 FTIP AMENDMENT NO. 10	Phase	Prior Years	10-11	11-12	12-13	13-14	14-15	15-16	Funding Summary	Local	State	NCIIP Earmark	IS-TEA/TEA-21/ PRNS/Other
CENTENNIAL EARMARK AND BELTWAY EARMARK														
NEW	**BELTWAY SYSTEM / SR-58 GAP CLOSURE - PRNS 5109(???)**				(100% Local)									
FTIP 2011 Amendment 10	IN BAKERSFIELD: SR-58 GAP CLOSURE FROM SR-99 TO COTTONWOOD ROAD; AN ELEMENT OF THE BAKERSFIELD BELTWAY SYSTEM **KER120101**	PE ROW CON			$ 3,000,000	$ 28,100,000								PRNS
		Total	$ -	$ -	$ 3,000,000	$ 28,100,000	$ -	$ -	$ -	Prior Current	$ - $ 8,620,000			$ - $ 22,480,000

100% Local Funds for Preliminary Engineering $3,000,000
Local Match (20%) for Beltway Federal Funds (80%) for Construction $5,620,000

PUBLIC WORKS AGENCY
TRANSPORTATION DEPARTMENT
Traffic, Advance Planning & Permits Division

M E M O R A N D U M

DATE: February 24, 2012

TO: RMA – Planning Division
Attention: Laura Hocking

FROM: Behnam Emami, Engineering Manager II

SUBJECT: REVIEW OF DOCUMENT 10-015
Project: **Draft Amendment #10 to 2011 FTIP, 2011 RTP Amendment #2, plus Addendum #2 to the Subsequent EIR**
Lead Agency: **Kern Council of Governments**
Kern County, California (Kern Co.)

Pursuant to your request, the Public Works Agency - Transportation Department has completed the review of the above subject document.

The "project" as defined by the Kern Council of Governments is a proposal for a formal amendment, Type #5: Formal Amendment, Conformity Determination and New Regional Emissions Analysis to the 2011 Federal Transportation Improvement Program (FTIP) and 2011 Regional Transportation Plan (RTP). The 2011 FTIP is the programming document that identifies four years (FY 10/11, FY 11/12, FY 12/13, and FY 13/14) of federal, state, and local funding sources for projects in Kern County.

We offer the following comment:

If any of the projects listed in the 2011 FTIP or 2011 RTIP, any future amendments, or subsequent environmental documents will have an impact on Ventura County roads, in particular Lockwood Valley Road, then the Transportation Department would like to review the project.

Our review is limited to the impacts this project may have on the County's Regional Road Network.

Please contact me at 654-2087 if you have questions.

F:\transpor\LanDev\Non_County\10-015-2 (Kern Co).doc

RESOURCE MANAGEMENT AGENCY

county of ventura

Planning Division
Kimberly L. Prillhart
Director

March 28, 2012

Kern Council of Governments
Attn.: Raquel Pacheco
1401 19th Street
Bakersfield, CA 93301

E-mail: rpacheco@kerncog.org

Subject: Comments on the Availability of Draft Amendment #10 to the 2011 FTIP, 2011 RTP Amendment #2 plus Addendum #2 to the Subsequent EIR, and Corresponding Draft Conformity Analysis for Interagency Consultation and Public Review

Dear Ms. Pacheco:

Thank you for the opportunity to review and comment on the subject document. Attached are the comments that we have received resulting from intra-county review of the subject document. Additional comments may have been sent directly to you by other County agencies.

Your proposed responses to these comments should be sent directly to the commenter, with a copy to Laura Hocking, Ventura County Planning Division, L#1740, 800 S. Victoria Avenue, Ventura, CA 93009.

If you have any questions regarding any of the comments, please contact the appropriate respondent. Overall questions may be directed to Laura Hocking at (805) 654-2443.

Sincerely,

Tricia Maier, Manager
Planning Programs Section

Attachment

County RMA Reference Number 10-015-2

Table of Contents

LIST OF FIGURES

LIST OF TABLES

Certification of the 2011 Regional Transportation Plan Subsequent Environmental Impact Report (SEIR) and Addendum EIR as the EIR for the Proposed 2011 Regional Transportation Plan Amendment No. 2

January 20, 2012

INTRODUCTION

The Kern Council of Governments (Kern COG) has prepared a second amendment to the 2011 Regional Transportation Plan (2011 RTP Amendment No. 2). The 2011 RTP, adopted on July 15, 2010 by Kern COG, included a list financially constrained improvement projects. In May 2011, Kern COG amended the 2011 RTP (Amendment No. 1) to reflect changes to the list of projects and certified a Program Subsequent EIR (SEIR) to address potential environmental effects. Improvements from Amendment No. 1 to the 2011 RTP are proposed to be revised again (2011 RTP Amendment No. 2). Amendment No. 2 revises the map and description of the Bakersfield Beltway System to consist of three major roadways: 1) Central System, 2) West Beltway, and 3) North Beltway. Kern COG 2011 RTP Amendment No. 2 makes the following minor changes to the project information previously provided in the 2011 RTP Amendment No. 1:

- The SR 58 Widening/ SR 99 to Cottonwood Road project (Table 1) has been renamed the SR 58 Gap Closure project and the start construction date has advanced from 2015 to 2013. The project limits (SR 99 to Cottonwood Road) and the cost remain the same;
- The Bakersfield Beltway Map (Figure 1) now includes the SR 58 Gap Closure project;
- The Bakersfield Beltway System description has been revised to include reference to the SR 58 Gap Closure project; and/or
- The Hosking Road Interchange (Table 1) construction start date has been advanced from 2014 to 2012.

As a result of these revisions there are no net changes to the funding during the period from 2011 to 2035. The total number and location of projects does not change from those approved as part of the 2011 RTP.

CEQA PROVISIONS

As a part of Kern COG's current review of the RTP Amendment No. 2, it is necessary to identify any areas of the 2011 RTP SEIR that might be substantially impacted by changes in projects or policy direction. Section 15162 of the California Environmental Quality Act (CEQA) provides that "[the lead agency…shall prepare an addendum to a previously certified EIR if some changes or additions are necessary but none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have occurred." (CEQA Guidelines §15164(a)]. The referenced provision states that "no subsequent EIR shall be prepared for that project unless the lead agency

determines, on the basis of substantial evidence in the light of the whole record, one or more of the following (CEQA Guidelines §15162(e):

- Substantial changes are proposed in the project, which will require major revisions of the previous EIR or Negative Declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;
- Substantial changes occur with respect to the circumstances under which the project is undertaken, which will require major revisions of the previous EIR or Negative Declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; and/or
- New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete or the Negative Declaration was adopted, shows any of the following:
  - The project will have one or more significant effects not discussed in the previous EIR or Negative Declaration;
  - Significant effects previously examined will be substantially more severe than shown in the previous EIR;
  - Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; and/or
  - Mitigation measures or alternatives, which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

An Addendum (for Amendment No. 2), has been prepared pursuant to the California Environmental Quality Act (CEQA) 15164, Public Resources Code 21000, to the 2011 Regional Transportation Plan EIR (2011 RTP SEIR) certified on July 15, 2010, and serves as the EIR for the proposed 2011 RTP Amendment No. 2 (project). This Addendum EIR outlines the changes to the RTP, as analyzed in the 2011 RTP SEIR and the Addendum EIR prepared by VRPA Technologies, Inc. for the 2011 RTP Amendment No. 1, and evaluates whether those changes, or new information or changed circumstances, would require substantial changes to the impacts identified or mitigation measures proposed.

Based upon review of the project and review of the potential environmental effects, it has been determined that the proposed project does not create any new significant adverse environmental impacts outside of the scope of the analyses already contained in the previously certified 2011 RTP SEIR or the SEIR for Amendment No. 1. Since the proposed project would not generate any new significant adverse environmental impacts or make any existing significant impacts substantially worse, another Addendum to the 2011 RTP SEIR has been prepared. The 2011 RTP, 2011 RTP SEIR, 2011 RTP Amendment No.1, and the 2011 RTP Draft SEIR Addendum prepared to address RTP Amendment No.1 can be found at www.kerncog.org and are on file at Kern COG offices.

PROJECT DESCRIPTION

2011 Regional Transportation Plan, Program Subsequent EIR, and 2011 RTP Amendment No. 2 Addendum EIR

The 2011 RTP is a planning guide containing transportation policy and projects for a 24 year period (through Fiscal Year 2034/35). The RTP is also used to guide development of the Regional Transportation Improvement Program (RTIP). The RTIP is the programming document used to plan the construction of regional transportation projects and requires California Transportation Commission (CTC) approval. Project-level assessment of environmental impacts was not addressed by the 2011 RTP SEIR nor have they been addressed in this RTP Amendment No. 2 Addendum EIR. The RTP is also used as a transportation planning document by each of the twelve member jurisdictions of Kern COG. The members include the County of Kern and the cities of Arvin, Bakersfield, California City, Delano, Maricopa, McFarland, Ridgecrest, Shafter, Taft, Tehachapi, and Wasco.

The RTP identifies the region's mobility needs and issues through to the year 2035, sets forth an action plan of projects and programs to address needs consistent with the adopted policies, and documents the financial resources needed to implement the plan. Additional areas of emphasis and policy initiatives in the 2011 RTP include Climate Change (including a Climate Change Plan and other greenhouse gas policies), Environmental Justice, Goods Movement, and Blueprint Planning. In addition, the 2011 RTP includes updated improvement project lists and updated performance measures. The 2011 RTP promotes a "balanced" transportation system. It calls for increased investments in alternative transportation modes, while accommodating a necessary amount of new highway capacity. Heavier emphasis on alternative modes, above and beyond those already incorporated in the RTP, may be desired or preferred but because of financial constraints, alternative mode additions are not financially feasible in the timeframe of the RTP.

The process to approve the 2011 RTP included: (1) assessing Kern County's transportation needs, identifying projects to address the needs, evaluating the projects considering benefit vs. cost and other performance objectives, and addressing air quality conformity requirements; (2) conducting public hearings on the RTP by Kern COG, and certification of the 2011 RTP SEIR by Kern COG, and (3) approval of a resolution passed by Kern COG approving the 2011 RTP. Public involvement was encouraged and received throughout the 2011 RTP development process. The 2011 RTP consists of required elements and is organized into the following chapters:

- Chapter 1. Introduction;
- Chapter 2. Transportation Planning Policies;
- Chapter 3. Planning Assumptions;
- Chapter 4. Strategic Investments;
- Chapter 5. Financing Transportation;
- Chapter 6. Future Links;
- Chapter 7. Monitoring Progress;
- Chapter 8. References; and
- Appendices. (Includes the San Joaquin Valley Regional Transportation Overview and other required documents)

The RTP, in conjunction with General Plan Circulation Elements adopted by the County of Kern and each of the cities within the County, designates the location and scale of existing and proposed transportation systems. The financing program contained in the 2011 RTP considered a projection of funding sources that may be available to finance transportation improvement projects over time. The projection of funds in the 2011 RTP was accomplished considering historical allocations of federal, state and other funding.

To evaluate the regional impacts associated with the 2011 RTP, a Program Subsequent EIR (SEIR) was prepared and certified. CEQA guidelines (Section 15168) define a Program EIR as, "an EIR that may be prepared on a series of actions that can be characterized as one large project and are related either geographically, or are logical parts in the chain of contemplated actions, or are in connection with issuance's of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program, or 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." After reviewing CEQA Section 15164 (referenced above), it was determined that the obligation to prepare another Subsequent or Supplemental EIR for Amendment No. 2 was not met and that an Addendum was the appropriate environmental document to address the 2011 RTP Amendment No 2.

Amendment No. 2 to the 2011 RTP

The scope of the proposed RTP Amendment No. 2 will be targeted at incorporating project updates for the Metropolitan Bakersfield area, as well as the latest planning assumptions to air quality conformity. Proposed RTP Amendment No. 2 necessitates the preparation of a transportation/air quality conformity analysis and an Addendum to the 2011 RTP SEIR.

Amendment No. 2 provides the foundation for planning the Metropolitan Bakersfield Transportation network as the Bakersfield Beltway System consisting of three major roadways: 1) Central System, 2) West Beltway, and 3) North Beltway. The SR 58 Gap Closure project as an element of the Bakersfield Beltway System Central System has been added within the Thomas Road Improvement Program (TRIP) as a renaming of the existing the SR 58 Widening from SR 99 to Cottonwood Road.

Improvement project delivery schedules reflected in the 2011 RTP are proposed to be revised as part of RTP Amendment No.2 as referenced in Table 1. Table 1 replaces Table 4.1 in the 2011 RTP. **Bolded** information in Table 1 reflects those projects that changed with RTP Amendment No. 2 in terms of project scheduling or timing only. Figures 1 through 5 provide a graphic view of the planned street and highway improvement projects reflected in Table 1 and replace Figures 4-6 through 4-9 in the 2011 RTP.

FINDINGS OF THE EIR

CEQA requires that a Final EIR be prepared, certified, and considered by decision-makers prior to taking action on a project. The Final EIR provides the local agency an opportunity to respond to comments received on the Draft EIR and to incorporate any changes or additions necessary to clarify and/or supplement the information contained in the document. The Final SEIR prepared for the 2011 RTP, therefore, represents the culmination of

all environmentally related issues raised during the comment period on the Draft SEIR. In addition, the Final SEIR contains a Mitigation Monitoring and Reporting Program that identifies the necessary processes that are required to ensure that the mitigation measures recommended in the Draft SEIR are implemented. The Final SEIR for the 2011 RTP is composed of the following documents:

- 2007 Destination 2030 Regional Transportation Plan (RTP), Draft Environmental Impact Report (EIR), March 1, 2007;
- 2007 Destination 2030 RTP, Final EIR, Mitigation Monitoring and Reporting Program, and Statement of Overriding Considerations, May 17, 2007;
- 2007 Destination 2030 RTP Amendment No.1, Addendum EIR, January 15, 2009
- 2007 Destination 2030 RTP Amendment No.1, January 15, 2009
- 2007 Destination 2030 RTP Amendment No. 2, Addendum EIR, September 17, 2009
- 2007 Destination 2030 RTP Amendment No. 2, September 17, 2009
- 2011 RTP Draft SEIR, April 30, 2010;
- 2011 RTP Final SEIR, July 15, 2010;
- 2011 RTP, July 15, 2010, and
- 2011 RTP Amendment No. 1, Addendum SEIR, May 2011.

The summary of mitigation measures and the mitigation monitoring program identified in the section *Summary of Mitigation Measures and Mitigation Monitoring Program* remain applicable considering changes reflected in this Addendum EIR.

TABLE 1

2011 through 2015 - Major Highway Improvements					
Project	Location		YOE Cost	Project ID	Start
Route 14	Inyokern	Redrock / Inyokern Rd to Rt 178 - widen to four lanes (Phase1)	42,000,000	KER08RTP006	2014
Route 46	Lost Hills	SLO County Line to Brown Material Rd - widen to four lanes (Phases 1 -3)	232,070,000	KER08RTP003	2009
Route 58	Metro Bkfd	Rosedale Hwy - Calloway Dr to Rt 99 - widen existing highway	24,226,000	KER08RTP007	2013
Route 58	Metro Bkfd	Rosedale Hwy - Allen Rd to Calloway Dr - widen existing highway	8,800,000	KER08RTP090	2013
Route 58	Bakersfield	**SR 58 Gap Closure; element of Bakersfield Beltway System**; Rt 99 to Cottonwood Rd. - widen **existing highway**	50,000,000	KER08RTP019	**2013**
Route 99	Metro Bkfd	Hosking Ave - construct interchange	35,000,000	KER08RTP009	**2012**
Route 99	Bakersfield	Wilson Rd to Rt 119 - widen to eight lanes	52,000,000	KER08RTP077	2012
Route 99	Bakersfield	Olive Drive - construct interchange upgrades	6,100,000	KER08RTP091	2012
Route 99	Bakersfield	Rt 204 to 7th Standard Rd - widen to eight lanes (Phase 1)	12,000,000	KER08RTP104	2012
Route 99	Delano	Woollomes Ave - construct interchange upgrades	5,000,000	KER08RTP114	2010
Route 178	Bakersfield	Morning Dr to Vineland Rd - new interchange with freeway	58,800,000	KER08RTP010	2013
Route 178	Bakersfield	Vineland Rd to east of Miramonte Dr - widen existing highway	50,000,000	KER08RTP011	2014
Challenger Dr. Ext.	Tehachapi	Viena St to Dennison Rd - construct new street	1,500,000	KER08RTP015	2011
W Ridgecrest Blvd	Ridgecrest	Mahan St to China Lake Blvd - widen to four lanes	10,200,000	KER08RTP001	2011
Westside Parkway	Metro Bkfd	Rt 99 / Oak St to Heath Rd - construct local freeway	340,000,000	KER08RTP004	2009
Hageman Flyover	Bakersfield	Knudsen Dr to Rt 204 - construct extension	68,900,000	KER08RTP013	2013
Hageman Grade Sep	Metro Bkfd	Hageman/Santa Fe Way @ BNSF - construct grade separation	39,500,000	KER08RTP117	2011
Oak St/24th Street	Bakersfield	Rt 178 (24th St) and Oak St - construct improvements	19,100,000	KER08RTP012	2012
Centennial Corridor	Bakersfield	I-5 to **Rt-58/Cottonwood Rd** - element of the Bakersfield Beltway System - construct new freeway and/or operational improvements	645,000,000	KER08RTP020	2015
24th Street	Bakersfield	Rt 178 (24th and 23rd St) Oak St to M Street - widen existing highway	34,000,000	KER08RTP014	2013
		Sub-total	**$1,734,196,000**		

TABLE 1 (Continued)

2016 through 2020 - Major Highway Improvements						
Project		Location	Scope	YOE Cost	Project ID	Start
Route 14		Inyokern	Redrock / Inyokern Rd to Rt 178 - widen to four lanes (Phase 2)	42,000,000	KER08RTP017	2018
			Sub-total	**$42,000,000**		
2021 through 2025 - Major Highway Improvements						
Project		Location	Scope	YOE Cost	Project ID	Start
Route 14		Inyokern	Redrock / Inyokern Rd to Rt 178 - widen to four lanes (Phase 3)	$32,000,000	KER08RTP024	2022
Route 58		Bakersfield	Rosedale Hwy - Rt 43 to Allen Rd - widen existing highway	59,000,000	KER08RTP092	2025
Route 58		Metro Bkfd	Rosedale Hwy @ Minkler Spur / Landco - construct grade separation	27,000,000	KER08RTP118	2025
Route 58		Bakersfield	Rt 99 to Cottonwood Rd - widen to eight lanes	47,400,000	KER08RTP093	2025
Route 65		Bakersfield	James Rd to Merle Haggard Dr - widen to four lanes	3,000,000	KER08RTP094	2021
Route 119		Taft	Cherry Ave to Elk Hills Rd (Phase 1, bypass) - widen to four lanes	115,000,000	KER08RTP022	2022
Route 178		Bakersfield	At Rt 204 - construct interchange	25,700,000	KER08RTP095	2025
Route 184		Bakersfield	At Union Pacific Railroad - construct grade separation	26,400,000	KER08RTP108	2025
US 395		Ridgecrest	Between Rt 178 and China Lake Blvd - construct passing lanes	20,000,000	KER08RTP089	2022
7th Standard Rd		Shafter/Bkfd	Rt 43 to Santa Fe Way - widen existing roadway	14,000,000	KER08RTP113	2025
West Beltway		Metro Bkfd	Rosedale Hwy to Westside Parkway - construct new facility	93,500,000	KER08RTP016	2025
			Sub-total	**$463,000,000**		

TABLE 1 (Continued)

2026 through 2030 - Major Highway Improvements						
Project		Location	Scope	YOE Cost	Project ID	Start
Route 46		Lost Hills	Brown Material Rd to I-5 - interchange upgrade at I-5 (Phase 4)	$97,000,000	KER08RTP018	2026
Route 119		Bakersfield	I-5 to Buena Vista - widen to four lanes	31,300,000	KER08RTP099	2026
Route 178		Metro Bkfd	West of Fairfax Rd to Vineland Rd - widen existing freeway	17,000,000	KER08RTP111	2028
Route 178		Bakersfield	Existing west terminus to Oswell St - widen to eight lanes	140,500,000	KER08RTP026	2026
Route 184		Bakersfield	Panama Rd to Rt 58 - widen to four lanes	10,500,000	KER08RTP100	2029
Route 184		Bakersfield	Morning Dr to Rt 178 - widen to four lanes	5,000,000	KER08RTP101	2026
Route 204		Bakersfield	Airport Drive to Rt 178 - widen existing highway	55,000,000	KER08RTP083	2030
Route 204		Bakersfield	F St - construct interchange	36,000,000	KER08RTP081	2030
			Sub-total	**$392,300,000**		
2031 through 2035 - Major Highway Improvements						
Project		Location	Scope	YOE Cost	Project ID	Start
Route 58		Bakersfield	At various locations - ramp improvements	$32,600,000	KER08RTP103	2033
Route 99		Bakersfield	At Olive Drive - reconstruct interchange	108,000,000	KER08RTP021	2033
Route 99		Bakersfield	At Snow Rd - construct new interchange	138,200,000	KER08RTP115	2033
Route 99		Bakersfield	Rt 204 to 7th Standard Rd - widen to eight lanes (Phase 2)	90,800,000	KER08RTP138	2033
Route 99		Bakersfield	At various locations - ramp improvements	37,000,000	KER08RTP105	2033
Route 119		Taft	Elk Hills - County Rd to Tupman Ave - widen to four lanes (Phase 2)	48,000,000	KER08RTP086	2033
Route 178		Metro Bkfd	Vineland to Miramonte - new interchange; widen existing freeway	119,000,000	KER08RTP025	2033
Route 178		Bakersfield	Miramonte to Rancheria - widen existing highway	19,800,000	KER08RTP084	2033
Route 178		Bakersfield	At Rt 204 and 178 - reconstruct freeway ramps	50,000,000	KER08RTP085	2033
Route 178		Bakersfield	At various locations - ramp improvements	37,000,000	KER08RTP106	2033
Route 184		Lamont	Rt 58 to Rt 178 - widen to four lanes	90,000,000	KER08RTP045	2033
West Beltway		Metro Bkfd	Pacheco Rd to Westside Parkway - construct new facility	115,793,000	KER08RTP139	2033
West Beltway		Metro Bkfd	Rosedale Hwy to 7th Standard Rd - construct new facility	115,793,000	KER08RTP102	2033
West Beltway		Metro Bkfd	Taft Hwy to Pacheco Rd - construct new facillity	90,000,000	KER08RTP097	2033
			Sub-total	**$1,091,986,000**		
			Total Major Highway Improvements	**$3,723,482,000**		

TABLE 1 (Continued)

2011 through 2035 - Transit						
Project		Location	Scope	YOE Cost	Project ID	Start
		Metro Bkd	Full size natural gas buses - 120 replacement buses	$45,000,000		
		Metro Bkd	Full size natural gas buses - 120 new buses	45,000,000		
		Various	Midsize natural gas buses - 120 replacement buses	6,000,000		
		Various	Midsize natural gas buses - 120 new buses	6,000,000		
		Various	Mini van / buses - 45 replacement buses	1,800,000		
		Metro Bkfd	2 transfer stations	3,000,000		
		Metro Bkfd	ITS related improvements / upgrades	3,000,000		
		Various	Park and Ride Lots (750 spaces)	3,000,000		
			Sub-total	**$112,800,000**		
2011 through 2035 - Non-motorized						
Project		Location	Scope	YOE Cost	Project ID	
Various locations		Metro Bkfd	Construct Class I or Class IIII Bike Path; striping; signage	$11,250,000		
Various locations		Metro Bkfd	Construct Pedestrian Enhancement Improvements	11,250,000		
Various locations		Countywide	Construct Class I or Class IIII Bike Path; striping; signage	7,500,000		
Various locations		Countywide	Construct Pedestrian Enhancement Improvements	7,500,000		
			Sub-total	**$37,500,000**		
2011 through 2035 - Freight Rail						
Project		Location	Scope	YOE Cost	Project ID	Start
Freight Rail		Tehachapi	Double-track sections from Bakersfield to Mojave	$111,700,000		In Progress
Freight Rail		Shafter	Shafter Intermodal Rail Facility	30,000,000		In Progress
			Sub-total	**$141,700,000**		

TABLE 1 (Continued)

2011 through 2035 - Passenger Rail*						
Project		Location	Scope	YOE Cost	Project ID	Start
Passenger Rail		Bakersfield	High Speed Rail Station - Bakersfield	50,000,000		2015
Passenger Rail		Region	High Speed Rail Alignment and Facilities Fresno to Bakersfield	819,500,000		2012
Passenger Rail		Region	High Speed Rail Alignment and Facilities Bakersfield to Palmdale	3,000,000,000		2015
Passenger Rail		Shafter/Wasco	High Speed Rail Heavy Maintenance Facility	450,000,000		2012
			Sub-total	**$4,319,500,000**		

*Passenger Rail Program is currently partially funded through the High Speed Rail Authority and is provided as information. Total is not included in summary.

2011 through 2035 - Summary of Constrained Projects	
Program Category	**Totals**
Major Highway Improvements 2011-2015	$1,734,196,000
Major Highway Improvements 2016-2035	1,989,286,000
Local Streets and Roads	1,311,000,000
Transit	112,800,000
Non-motorized	37,500,000
Passenger / Freight Rail	141,700,000
Grand Total	**$5,326,482,000**

FIGURE 1

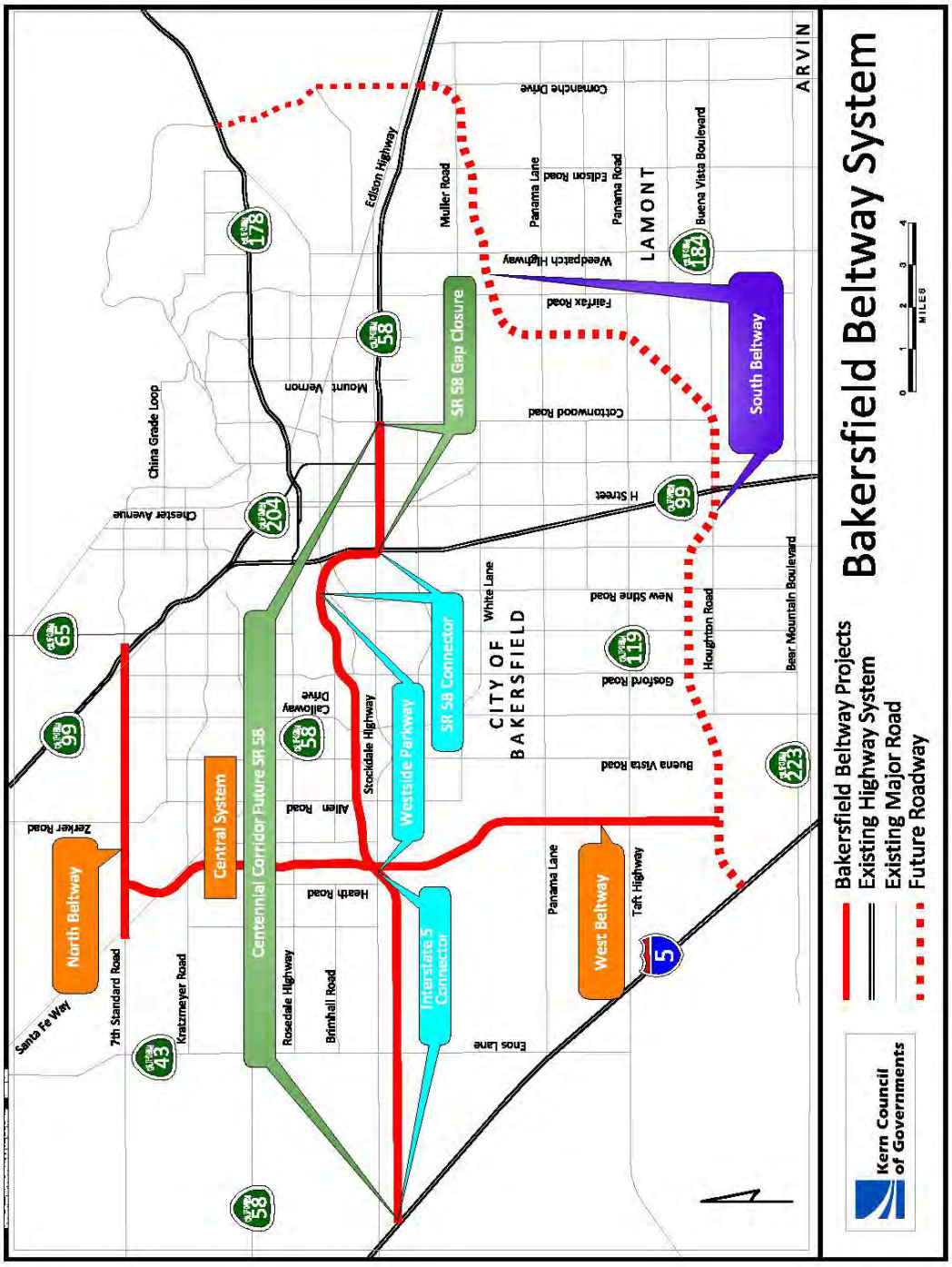

Bakersfield Beltway System
Bakersfield Beltway Projects
Existing Highway System
Existing Major Road
Future Roadway
Kern Council of Governments
MILES
ARVIN
LAMONT
CITY OF BAKERSFIELD
North Beltway
Centennial Corridor Future SR 58
Central System
Westside Parkway
SR 58 Connector
SR 58 Gap Closure
South Beltway
West Beltway
Interstate 5 Connector
Edison Highway
Muller Road
Panama Lane
Edison Road
Panama Road
Buena Vista Boulevard
Comanche Drive
Weedpatch Highway
Fairfax Road
Cottonwood Road
Mount Vernon
China Grade Loop
Chester Avenue
H Street
White Lane
New Stine Road
Houghton Road
Bear Mountain Boulevard
Gosford Road
Buena Vista Road
Stockdale Highway
Calloway Drive
Allen Road
Heath Road
Zerker Road
7th Standard Road
Kratzmeyer Road
Rosedale Highway
Brimhall Road
Enos Lane
Taft Highway
Santa Fe Way
178
58
204
99
65
119
223
43
5

FIGURE 2

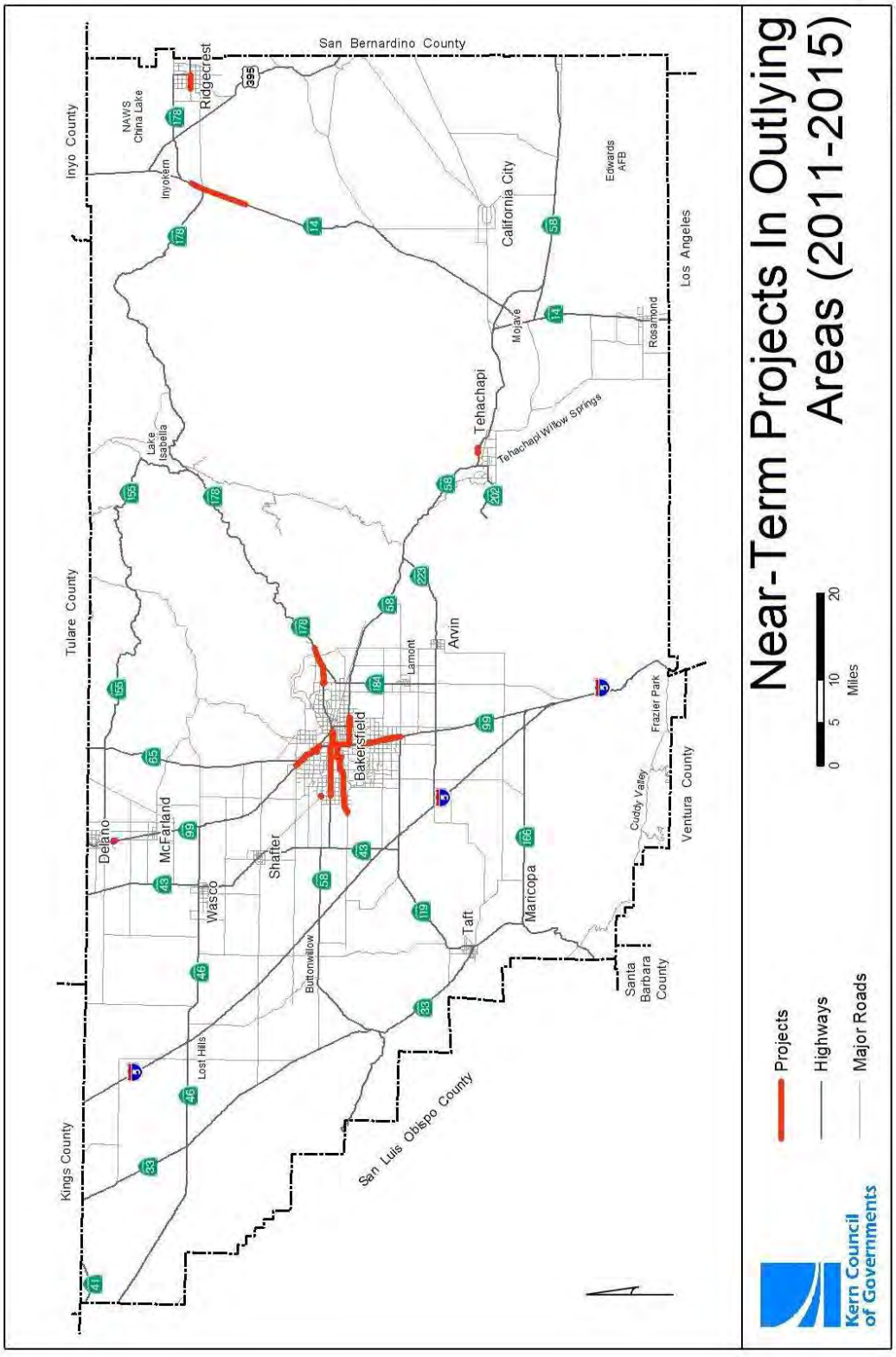

Near-Term Projects In Outlying Areas (2011-2015)
Projects
Highways
Major Roads
0 5 10 20
Miles
Kern Council of Governments
San Bernardino County
Inyo County
Tulare County
Kings County
San Luis Obispo County
Santa Barbara County
Ventura County
Los Angeles
Ridgecrest
NAWS China Lake
Inyokern
California City
Edwards AFB
Mojave
Rosamond
Tehachapi
Tehachapi Willow Springs
Lake Isabella
Arvin
Lamont
Bakersfield
Frazier Park
Cuddy Valley
Delano
McFarland
Shafter
Wasco
Buttonwillow
Taft
Maricopa
Lost Hills

FIGURE 3

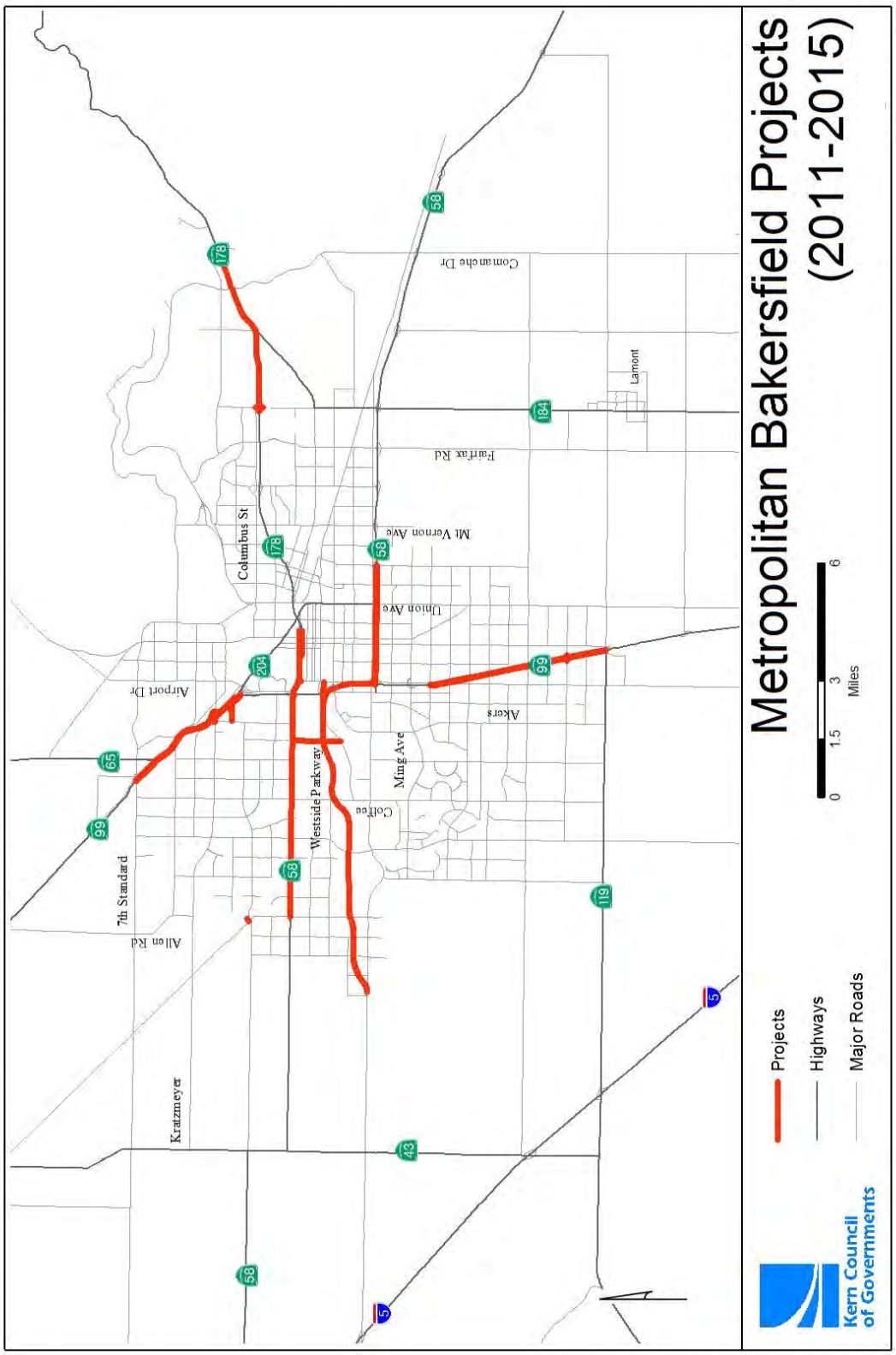

Metropolitan Bakersfield Projects
(2011-2015)
Projects
Highways
Major Roads
0
1.5
3
6
Miles
Kern Council of Governments
Comanche Dr
Lamont
Fairfax Rd
Mt Vernon Ave
Columbus St
Union Ave
Airport Dr
Akers
Ming Ave
Westside Parkway
Coffee
7th Standard
Allen Rd
Kratzmeyer
178
58
184
204
99
65
119
5
43

FIGURE 4

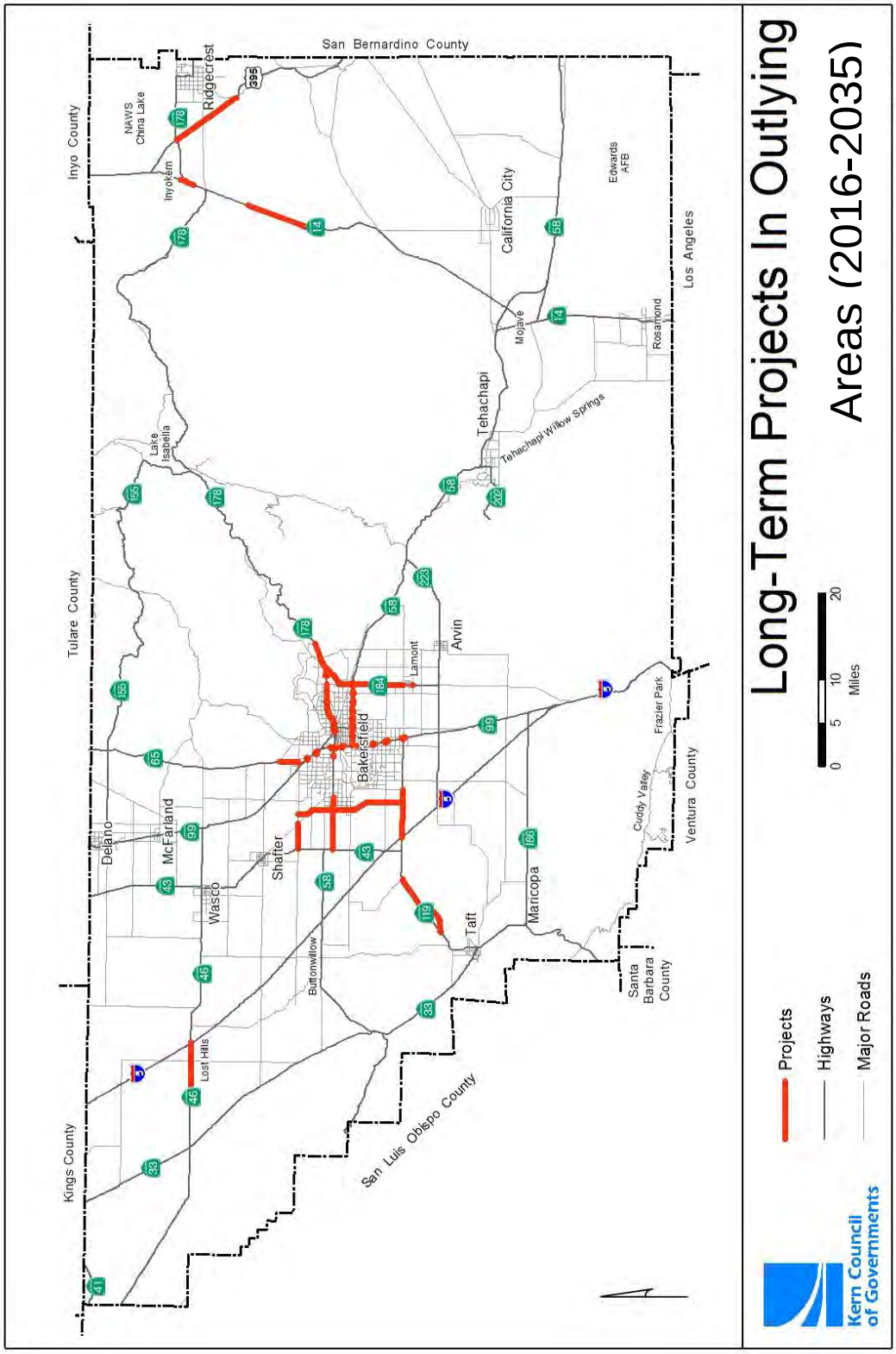
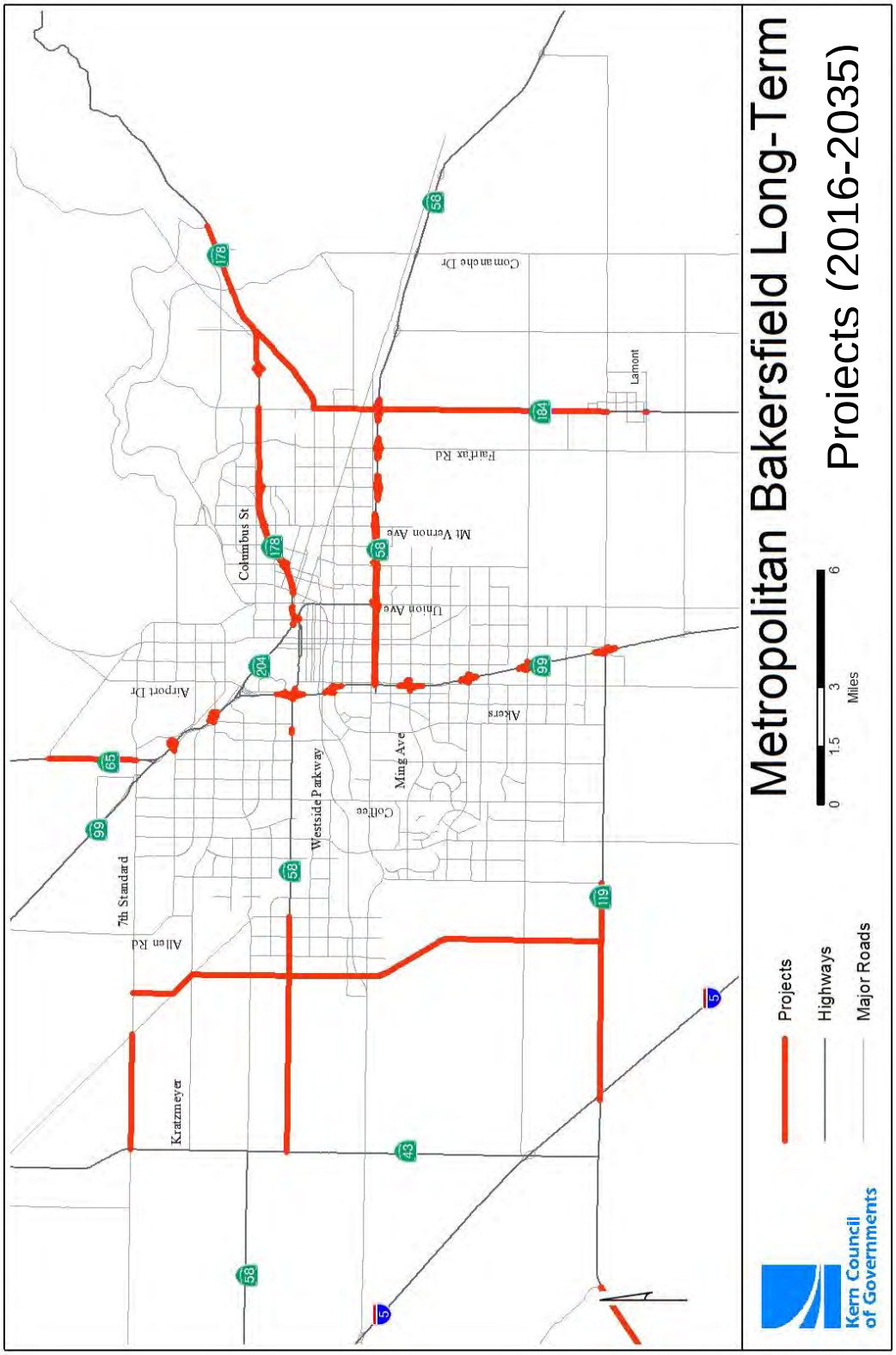

Long-Term Projects In Outlying Areas (2016-2035)
San Bernardino County
Inyo County
Tulare County
Kings County
San Luis Obispo County
Santa Barbara County
Ventura County
Los Angeles
Ridgecrest
NAWS China Lake
Inyokern
California City
Edwards AFB
Mojave
Rosamond
Tehachapi
Tehachapi/Willow Springs
Lake Isabella
Arvin
Lamont
Bakersfield
Frazier Park
Cuddy Valley
Delano
McFarland
Shafter
Wasco
Buttonwillow
Lost Hills
Taft
Maricopa
0 5 10 20
Miles
Projects
Highways
Major Roads
Kern Council of Governments

FIGURE 5


Metropolitan Bakersfield Long-Term Projects (2016-2035)
Projects
Highways
Major Roads
0
1.5
3
6
Miles
Kern Council of Governments
Comanche Dr
Lamont
Fairfax Rd
Mt Vernon Ave
Columbus St
Union Ave
Airport Dr
Akers
Ming Ave
College
Westside Parkway
7th Standard
Allen Rd
Kratzmeyer
178
58
184
204
99
65
119
43
5

CHANGES TO THE 2011 RTP

The purpose of this Addendum EIR is to reflect changes and additions to the previously certified 2011 RTP SEIR and Addendum EIR for RTP Amendment No. 1. Considering CEQA provisions detailed previously, the 2011 RTP Amendment No. 2 will not result in further environmental impacts based upon the following conclusions:

- 2011 RTP Amendment No. 2 will not cause additional significant environmental effects addressed in the SEIR other than those already identified;
- The effects referenced in the 2011 RTP SEIR will not be substantially more severe as a result of changes identified in the 2011 RTP Amendment No. 2; and
- Mitigation measures contained in the 2011 RTP SEIR would continue to be feasible and would reduce environmental effects of changes referenced in this Addendum EIR.

While the proposed changes to the 2011 RTP may represent "*New information of substantial importance…*" as stated in 15162(a)(3), these changes will not result in one or more significant effects that are not already discussed in the previous EIRs, nor result in impacts that are substantially more severe than shown in the 2011 RTP EIR. Based upon the findings described above, RTP Amendment No. 2 will not require major revisions of the 2011 RTP SEIR for the following reasons:

- Potential impacts and mitigation factors have been adequately addressed in the certified 2011 RTP SEIR and reviewed in this Addendum EIR;
- Each individual transportation project referenced in the 2011 RTP, RTP Amendment No. 1 and in RTP Amendment No.2 will be evaluated by the responsible local agency to identify potential environmental effects; and
- After reviewing CEQA Section 15164, it has been determined that the obligation to prepare a Supplemental or Subsequent EIR is not met.

To further justify that changes reflected in the 2011 RTP Amendment No. 2 will not cause additional environmental effects or require changes to mitigation measures contained in the 2011 RTP SEIR or in RTP Amendment No. 1 Addendum SEIR, the following sections have been prepared.

Project Timing

Modifications and adjustments associated with 2011 RTP Amendment No. 2 do not require revising the environmental analysis in the SEIR for the base year (2011) or the RTP Horizon Year of 2035. The environmental areas that require interim year analysis include only Air Quality (Section 3.3) and Climate Change (Section 3.5). Amendment No. 2 revises the description of the Bakersfield Beltway System and advances construction start dates for two projects (Hosking and SR 58 Gap Closure), as reflected in Table 1. Changes to the construction start dates do not affect the modeling years of 2020 or 2035. To reflect the most current environmental analysis, only Air Quality Conformity has been revised. All other Environmental Analyses do not warrant revisions and remain valid. Based upon the results of the Air Quality Conformity analysis, changes reflected in the 2011 RTP Amendment No. 2 will not cause additional environmental effects referenced in the 2011 RTP SEIR.

Bakersfield Transportation Network (Bakersfield Beltway System)

The foundation for planning the metropolitan Bakersfield transportation network is the Bakersfield Beltway System, as shown on Figure 1. This system of freeways and expressways consists of three major roadways: 1) Central System, 2) West Beltway, 3) North Beltway. These facilities may be built in phases, which may initially be constructed as expressways and upgraded to freeways as future demand requires.

The Central System is an element of the Bakersfield Beltway System that includes the State Route (SR) 58 Gap Closure along with the Centennial Corridor; consisting of the SR 58 Connector, the Westside Parkway and the Interstate 5 Connector.

The SR 58 Gap Closure will widen SR 58 to a six-lane facility between Cottonwood Road and east of Route 99. Currently, this four-lane section is located between a six-lane facility east of Cottonwood Road and a six-lane facility at the SR 99/SR 58 interchange. As a gap closure, this project has independent utility, and also provides a logical terminus and network continuity for the Central System.

The SR 58 Connector will include operational improvements from Cottonwood Road to SR 99 and a new freeway will extend from the western terminus of the SR 58 Gap Closure to the Westside Parkway. The Westside Parkway begins about one mile east of SR 99, extends across the Kern River at Truxtun Avenue, and continues along the north side of the river, connecting with Stockdale Highway near Heath Road. The Interstate 5 Connector will extend from the western terminus of the Westside Parkway to Interstate 5, parallel to Stockdale Highway. Initially, this section will consist of operational improvements on the existing Stockdale Highway. Together, these three projects constitute the Centennial Corridor.

The completed Central System will provide the necessary capacity for east/west travel and relieve congestion on existing SR 58 (Rosedale Highway), SR 99, California Avenue, and other existing east/west routes. The Central System will also provide for regional and interstate east-west goods movement through the metropolitan area. Once this facility is finished, it is anticipated that Caltrans will designate the Central System as the SR 58.

The West Beltway will provide a major north/south route through the western portion of metropolitan Bakersfield, an element of the network that connects SR 99 with Interstate 5. This freeway would reduce traffic congestion on SR 99 and provide a link across the Kern River from southwest Bakersfield to the Westside Parkway.

The North Beltway will provide an east/west connection in northern metropolitan Bakersfield. This facility initially would be built as an expressway; providing access for the northern metropolitan Bakersfield area, while connecting SR 99 with Interstate 5.

As part of the long-range planning vision, the South Beltway will not be needed to meet regional transportation needs until sometime beyond 2050. It will extend from SR 178, across SR 58, around southeast Bakersfield, and west to Interstate 5 just south of SR 119 (Taft Highway). When constructed, the South Beltway will provide an additional east-west corridor, providing regional and interstate travelers with an alternative route to by-pass the City of Bakersfield.

Air Quality Conformity

Modifications and adjustments associated with 2011 RTP Amendment No. 2 do not require revising the environmental analysis in the SEIR for the base year (2011) or the RTP Horizon Year of 2035. The environmental areas that require interim year analysis include only Air Quality (Section 3.3) and Climate Change (Section 3.5). Amendment No. 2 revises the description of the Bakersfield Beltway System and advances construction start dates for two projects (Hosking and SR 58 Gap Closure), as reflected in Table 1. Changes to the construction start dates do not affect the modeling years of 2020 or 2035. The previous analysis in the 2011 RTP SEIR remains valid and is included by reference in this Addendum EIR to the 2011 RTP SEIR. To reflect the most current environmental analysis, only Air Quality Conformity has been revised.

An important consideration in determining whether or not the changes reflected in Table 1 will result in additional significant impacts is the issue of air quality conformity. Tables ~~X~~2 through ~~XX~~ 9 identify air quality conformity analysis results for the San Joaquin Valley Air Basin and East Kern County Air Basin of Kern County including the projected emissions of hydrocarbons, nitrogen oxides, carbon monoxide, volatile organic gases, and particulate emissions for the project compared with the base or the emissions budgets for various years. The analysis shows that emissions related to the projects contained in Table 1 does not exceed the base and budget thresholds established by EPA.

Results of the Conformity Analysis TO BE INSERTED BY KERN COG

A regional emissions analysis was conducted for the years 2011, 2012, 2014, 2017, 2018 (via interpolation), 2020, 2023, 2025 and 2035 for each applicable pollutant. All analyses were conducted using the latest planning assumptions and emissions models. The major conclusions of the Kern Council of Governments Conformity Analysis are:

- For carbon monoxide, the total regional on-road vehicle-related emissions associated with implementation of the 2011 FTIP Amendment 10~~7~~ and the 2011 RTP Amendment 2~~1~~ for the analysis years are projected to be less than the approved emissions budget established in the *2004 Revision to the California State Implementation Plan for Carbon Monoxide*. The applicable conformity test for carbon monoxide is therefore satisfied.
- For ozone, the total regional on-road vehicle-related emissions (ROG and NOx) associated with implementation of the 2011 FTIP Amendment 10~~7~~ and the 2011 RTP Amendment 2~~1~~ for all years tested are projected to be less than the approved ~~adequate~~ emissions budgets specified in the *2007 Ozone Plan (as revised in 2011)*. The conformity tests for ozone are therefore satisfied.
- For PM-10, the total regional vehicle-related emissions (PM-10 and NOx) associated with implementation of the 2011 FTIP Amendment 10~~7~~ and the 2011 RTP Amendment 2~~1~~ for all years tested are either (1) projected to be less than the approved emissions budgets, or (2) less than the emission budgets using the

approved PM-10 and NOx trading mechanism for transportation conformity purposes from the *2007 PM-10 Maintenance Plan*. The conformity tests for PM-10 are therefore satisfied.

- For PM2.5, the total regional on-road vehicle-related emissions associated with implementation of the 2011 FTIP Amendment 10~~7~~ and the 2011 RTP Amendment 2~~1~~ for the analysis years are either (1) projected to be less than the approved ~~adequate~~ emission budgets, or (2) less than the emission budgets using the approved PM2.5 and NOx trading mechanism for transportation conformity purposes from ~~specified in~~ the *2008 PM2.5 Plan (as revised in 2011)*. The conformity tests for PM2.5 for both the 1997 and 2006 standards are therefore satisfied.
- The 2011 FTIP Amendment 10~~7~~ and the 2011 RTP Amendment 2~~1~~ will not impede and will support timely implementation of the TCMs that have been adopted as part of applicable air quality implementation plans. The current status of TCM implementation is documented in Chapter 4 of this report.
- Since the local SJV procedures (e.g., Air District Rule 9120 Transportation Conformity) have not been approved by EPA, consultation has been conducted in accordance with Federal requirements.

Regional emissions analyses were also conducted for 2011 (for interpolation only), 2013 (via interpolation), 2015, 2025, and 2035 for the Eastern Kern ozone area and the Indian Wells Valley PM-10 area; other years have been determined by interpolating between the years for which the regional emissions analysis is performed in accordance with the Federal conformity transportation regulation. No emissions analysis was completed for the portion of the SJV PM-10 nonattainment area that is under Kern County Air Pollution Control District jurisdiction (East Kern PM-10 Area).

- For Mojave Desert ozone, the total regional on-road vehicle-related emissions (ROG and NOx) associated with implementation of the 2011 FTIP Amendment 10~~7~~ and the 2011 RTP Amendment 2~~1~~ for all years tested are projected to be less than the adequate emissions budgets specified in the 8-Hour Ozone Early Progress Plan. The conformity tests for ozone are therefore satisfied.
- For Indian Wells Valley PM-10, the total regional vehicle-related emissions associated with implementation of the 2011 FTIP Amendment 10~~7~~ and the 2011 RTP Amendment 2~~1~~ for all years tested are projected to be less than the approved emissions budgets from the PM-10 Attainment Demonstration, Maintenance Plan, and Redesignation Request. The conformity tests for PM-10 are therefore satisfied.
- For the portion of the SJV PM-10 nonattainment area that is under the jurisdiction of the Kern County APCD (East Kern PM-10 Area), the interim emissions test is satisfied for all years since the transportation projects and planning assumptions in both the "action" and "baseline" scenarios are exactly the same. In accordance with Section 93.119(g)(2), the emissions predicted in the "action" scenario are not greater than the emissions predicted in the "Baseline" scenario for such analysis years. The conformity tests for PM-10 are therefore satisfied.

Based on the conformity analysis, the 2011 FTIP and the 2011 RTP Amendment No. 2 conform to the applicable State Implementation Plan (SIP) and all applicable sections of the EPA's Transportation Conformity Rule.

♦ State Air Quality Standards

The SJVAPCD and EKCAPCD are two of 35 air quality management districts that have prepared air quality

management plans to accomplish a five percent annual reduction in emissions documenting progress toward achievement of the state ambient air quality standards.

The District air quality management plans document required emissions reductions from all emissions sources, mobile and stationary. For this analysis, only on-road mobile source emissions are considered, as the 2011 RTP Amendment No. 2 does not impact the implementation of any SJVAPCD regulations or incentives on other emissions source categories. As such, this analysis will not show the entire five percent reductions required by each of the District plans (for each applicable pollutant), but, will show the on-road mobile source share of the five percent per year reductions resulting from each of the District Plans. Required reductions from all other emissions sources can be found in the applicable District Plan.

The 2011 RTP Amendment No. 2 demonstrates compliance with the list of comprehensive regulatory and incentive based measures contained in each plan by demonstrating that motor vehicle emissions resulting from the 2011 RTP Amendment No. 2 are less than specified motor vehicle emissions "budgets" contained in the applicable District plans (2007 Ozone Plan, 2008 $PM_{2.5}$ Plan, and 2007 PM_{10} Maintenance Plan, which relies on the 2003 PM_{10} Plan for emissions reductions measures). To document compliance with the State air quality standards, each of these District plans identifies specific years in which progress toward attainment of the standard must be measured. These years are described as "budget" years because each of these District plans identifies motor vehicle emission "budgets" in which 2011 RTP Amendment No. 2 motor vehicle emissions cannot exceed in order to ensure continued progress toward attainment of the State standard. For on-road mobile sources, the District plans identify the same emissions reduction strategies for both State and federal standards.

TABLE 2

Conformity Results for RTP Projects
2011 Conformity Results Summary – Kern

Pollutant	Scenario	Emissions Total		DID YOU PASS?
		CO (tons/day)		CO
Carbon Monoxide	2010 Budget	180		
	2017	69		YES
	2018 Budget	180		
	2018	67		YES
	2025	52		YES
	2035	51		YES

Ozone	Scenario	ROG (tons/day)	NOx (tons/day)		ROG	NOx
Ozone	2011 Budget	12.7	50.3			
	2011	11.1	43.2		YES	YES
	2014 Budget	9.7	42.7			
	2014	8.2	35.8		YES	YES
	2017 Budget	8.7	31.7			
	2017	7.3	25.6		YES	YES
	2020 Budget	8.2	25.1			
	2020	6.9	19.7		YES	YES
	2023 Budget	7.9	18.6			
	2023	6.7	14.2		YES	YES
	2025	6.4	11.9		YES	YES
	2035	6.0	9.8		YES	YES

Pollutant	Scenario	PM-10 (tons/day)	NOx (tons/day)		PM-10	NOx
PM-10	2020 Budget	14.7	39.5			
	2020	12.7	34.1		YES	YES
	2020 Budget	14.7	39.5			
	2025	12.9	25.6		YES	YES
	Adjusted 2020 Budget	16.6	36.7			
	2035	16.6	23.3		YES	YES

TABLE 2 (Continued)
Conformity Results for RTP Projects
2011 Conformity Results Summary – Kern

Pollutant	Scenario	PM2.5 (tons/day)	NOx (tons/day)		PM2.5	NOx
1997 PM2.5 24-Hour & Annual Standards and 2006 24-Hour Standard	2012 Budget	1.9	48.9			
	2012	1.6	42.4		YES	YES
	2014 Budget	1.2	43.8			
	2014	1.0	37.8		YES	YES
	2014 Budget	1.2	43.8			
	2017	0.6	22.1		YES	YES
	2014 Budget	1.2	43.8			
	2025	1.1	15.4		YES	YES
	Adjusted 2014 Budget	1.3	42.9			
	2035	1.3	18.5		YES	YES

TABLE 3

Conformity Results for RTP Projects
2011 Conformity Results Summary – Kern Indian Wells Valley

Pollutant	Scenario	Emissions Total		DID YOU PASS?
		PM-10 (tons/day)		PM-10
PM-10	2001 Budget	1.6		
	2011	1.2		YES
	2013 Budget	1.7		
	2013	1.0		YES
	2015	0.9		YES
	2025	1.1		YES
	2035	1.3		YES

TABLE 4

Conformity Results for RTP Projects
2011 Conformity Results Summary – Kern Mojave Desert

Pollutant	Scenario	Emissions Total			DID YOU PASS?	
		ROG (tons/day)	NOx (tons/day)		ROG	NOx
Ozone	2008 Budget	5	18			
	2011	3	13		YES	YES
	2015	3	9		YES	YES
	2025	2	5		YES	YES
	2035	2	5		YES	YES

The SJVAPCD 2007 PM_{10} Maintenance Plan, which relies on the 2003 PM_{10} Plan for emissions reductions measures allows trading from the motor vehicle emissions "budget" for the PM_{10} precursor NOx to the motor vehicle emissions budget for primary PM_{10} using a 1.5 to 1 ratio. The trading mechanism allows the agencies responsible for demonstrating transportation conformity in the San Joaquin Valley to supplement the 2005 budget for PM_{10} with a portion of the 2005 budget for NOx, and use these adjusted motor vehicle emissions budgets for PM_{10} and NOx to demonstrate transportation conformity with the PM_{10} Maintenance Plan for analysis years after 2005. The approved PM_{10} trading mechanism recognizes NOx precursor emissions result in the formation of PM_{10} emissions at a rate of 1 ton of PM_{10} for every 1.5 tons of NOx.

Documentation of this can be found in the 2011 Conformity Analysis for the 2011 RTP Amendment No. 2.

Similar to the analysis documenting compliance with federal standards, the term "budget" after scenario year represents a not to exceed value. The term base year after a scenario year in the tables below also reflects a not to exceed value against which future emissions from the 2011 RTP Amendment No. 2 are measured.

For this analysis, only on-road mobile sources are considered as the 2011 RTP Amendment No. 2 does not impact the implementation of any SJVAPCD or EKCAPCD regulations or incentives on other emissions source categories.

Results of the Analysis

~~As shown in Tables 23 through 27, the total emissions in each scenario year for each pollutant is less than the emissions "budget" as established in the applicable plans. As previously noted, the emissions "budget" for each criteria pollutant is a "threshold" or "not to exceed" value for emissions. These tables demonstrate that the 2011 RTP Amendment No. 2 contributes to positive progress toward the attainment of State ambient air quality standards. These tables also demonstrate that the 2011 RTP Amendment No. 2 is consistent with the SJVAPCD and EKCAPCD Plans, including their regulations and incentives relative to motor vehicle emissions budgets.~~

~~While Tables 25 and 26 (PM_{10}) document that PM_{10} emissions grow in 2035, it should be noted that PM_{10} and $PM_{2.5}$ precursor NOx emissions continue to decrease. By reducing the PM_{10} and $PM_{2.5}$ precursor emissions, the 2011 RTP and Amendment No. 2 will reduce the potential for the formation of PM_{10} and $PM_{2.5}$ respectively. Additionally, it should be noted that PM_{10} emissions in 2035 as well as $PM_{2.5}$ emissions in 2035 still remain below the motor vehicle emissions thresholds (i.e. "budget year" and "base year"); therefore the emissions comply with the SJVAPCD and EKCAPCD Plans to reduce PM_{10} and $PM_{2.5}$ emissions. Collectively, this demonstrates compliance with the State ambient air quality standards for PM_{10} and $PM_{2.5}$~~

TABLE 5

Ozone, ROG, and NO_X Emissions Test – Kern SJVAB
(Summer Tons per Day)

	Emissions (Tons/Day)		%Below Budget		% Reduction/Year	
	ROG	NOX	ROG	NOX	ROG	NOX
2011 Budget	**12.7**	**50.3**	**N/A**	**N/A**	**N/A**	**N/A**
2011	11.1	43.2	12.60%	14.12%	-	-
2014 Budget	**9.7**	**42.7**	**N/A**	**N/A**	**N/A**	**N/A**
2014	8.2	35.8	15.46%	16.16%	8.71%	5.71%
2017 Budget	**8.7**	**31.7**	**N/A**	**N/A**	**N/A**	**N/A**
2017	7.3	25.6	16.09%	19.24%	3.66%	9.50%
2020	6.9	19.7	20.69%	37.85%	1.83%	7.68%
2023	6.7	14.2	22.99%	55.21%	0.97%	9.31%
2025	6.4	11.9	26.44%	62.46%	2.24%	8.10%
2035	6.0	9.8	31.03%	69.09%	0.63%	1.76%

Source: Kern COG, 2011

TABLE 6

Ozone, ROG, and NO_X Emissions Test – Eastern Kern
(Summer Tons per Day)

	Emissions (Tons/Day)		%Below Budget		% Reduction/Year	
	ROG	NOX	ROG	NOX	ROG	NOX
2008 Budget	5.0	18.0	N/A	N/A	N/A	N/A
2011	3.0	13.0	40.00%	27.78%	-	-
2015	3.0	9.0	40.00%	50.00%	0.00%	7.69%
2025	2.0	5.0	60.00%	72.22%	3.33%	4.44%
2035	2.0	5.0	60.00%	72.22%	0.00%	0.00%

Source: Kern COG, 2011

TABLE 7

PM_{10} Emissions – Kern SJVAB
(Annual Tons per Day)

	Emissions (Tons/Day)		%Below Budget		% Reduction/Year	
	ROG	NOX	ROG	NOX	ROG	NOX
2020 Budget	14.7	39.5	N/A	N/A	N/A	N/A
2020	12.7	34.1	13.61%	13.67%	-	-
2020 Budget	14.7	39.5	N/A	N/A	N/A	N/A
2025	12.9	25.6	12.24%	35.19%	0.00%	4.99%
2020 Adjusted Budget	16.6	36.7	N/A	N/A	N/A	N/A
2035	16.6	23.3	0.00%	36.51%	0.00%	0.90%

Source: Kern COG, 2011

TABLE 8

PM_{10} Emissions – Eastern Kern (Indian Wells Valley)
(Annual Tons per Day)

	Emissions (Tons/Day)	%Below Budget	% Reduction/Year
	PM10	PM10	PM10
2001 Budget	1.6	N/A	N/A
2011	1.2	25.00%	-
2013 Budget	1.7	N/A	N/A
2013	1.0	41.18%	-
2015	0.9	47.06%	5.00%
2025	1.1	35.29%	0.00%
2035	1.3	23.53%	0.00%

Source: Kern COG, 2011

TABLE 9

$PM_{2.5}$ Emissions – SJVAB
1997 $PM_{2.5}$ - 24-Hour & Annual Standards and 2006 24-Hour Standard

	Emissions (Tons/Day)		%Below Budget		% Reduction/Year	
	ROG	NOX	ROG	NOX	ROG	NOX
2012 Budget	**1.9**	**48.9**	**N/A**	**N/A**	**N/A**	**N/A**
2012	1.6	42.4	15.79%	13.29%	-	-
2014 Budget	**1.2**	**43.8**	**N/A**	**N/A**	**N/A**	**N/A**
2014	1.0	37.8	16.67%	13.70%	18.75%	3.62%
2014 Budget	**1.2**	**43.8**	**N/A**	**N/A**	**N/A**	**N/A**
2017	0.6	22.1	50.00%	49.54%	13.33%	13.84%
2014 Budget	**1.2**	**43.8**	**N/A**	**N/A**	**N/A**	**N/A**
2025	1.1	15.4	8.33%	64.84%	0.00%	3.79%
2014 Adjusted Budget	1.3	42.9	**N/A**	**N/A**	**N/A**	**N/A**
2035	1.3	18.5	0.00%	56.88%	0.00%	0.00%

Source: Kern COG, 2011

Significance After Mitigation

The Project will result in beneficial effects of system-wide improvement in traffic flows and reduced congestion, which would reduce the potential for increased air emissions. The SJVAPCD and EKCAPCD Plans all document the Districts' plans to achieve the State ambient air quality standards, and as such, compliance with the regulations and incentives contained in the plans results in compliance with the State ambient air quality standards. Based on the air quality analysis, the 2011 RTP Amendment No. 2 conforms to the applicable SJVAPCD and EKCAPCD plans and demonstrates progress toward attainment with the State ambient air quality standards for PM_{10}, $PM_{2.5}$ and Ozone. As a result, implementation of the 2011 RTP Amendment No. 2 would result in a ***less than significant*** impact to PM_{10}, $PM_{2.5}$, and Ozone consistent with the finding made in the 2011 RTP SEIR. While the 2011 RTP Amendment No. 2 does contribute to an ongoing violation, it does not impede the above referenced plans and regulations. It is understood that the air quality in the Kern County needs significant improvement. To that end, this Addendum EIR identifies all feasible mitigation measures to improve air quality and will not create a new violation or worsen existing violations.

Climate Change

Modifications and adjustments associated with 2011 RTP Amendment No. 2 do not require revising the environmental analysis in the SEIR for the base year (2011) or the RTP Horizon Year of 2035. The environmental areas that require interim year analysis include only Air Quality (Section 3.3) and Climate Change (Section 3.5). Amendment No. 2 revises the description of the Bakersfield Beltway System and advances construction start dates for two projects (Hosking and SR 58 Gap Closure), as reflected in Table 1. Changes to the construction start dates do not affect the modeling years of 2020 or 2035. The previous analysis in the 2011 RTP SEIR remains valid and is included by reference in this Addendum EIR to the 2011 RTP SEIR.

Increased Transportation GHG Emissions May Cause Climate Change

The ultimate sources of increased transportation emissions in Kern County are population and employment growth, which will increase with or without projects referenced in the 2011 RTP. Kern COG does not implement land use policy in Kern County; rather, this is under the jurisdiction of the County and the various cities. Decisions about the place, pace, and scale of growth and development are reflected in the general plans and project approvals adopted by the local agencies. The 2011 RTP is designed to complement, rather than change, the plans adopted by the local agencies. Thus, the ultimate effect of the 2011 RTP on transportation emissions is not to increase the amount of travel per se, but rather to influence where and how travel occurs within and through the County.

CO2 Emissions

Emissions associated with the 2011 RTP Amendment No. 2 will not differ from RTP Amendment No. 1. Amendment No. 2 revises the description of the Bakersfield Beltway System and advances construction start dates for two projects (Hosking and SR 58 Gap Closure), as reflected in Table 1. Changes to the construction start dates do not affect the modeling years of 2020 or 2035. Consistency with AB 32 will be evaluated by reviewing the Scoping Plan[1] and evaluating whether the actions in the 2011 RTP and the 2011 RTP Amendment No. 2 will in any way impede implementation of the Scoping Plan.

Significance After Mitigation

Mitigation measures are presented above that will reduce GHG emissions to the extent feasible considering requirements set forth in AB 32. Such measures will also assist in the promotion and implementation of Smart Growth and sustainable planning practices by the cities and the County. While such feasible mitigation measures will reduce GHG impacts, fuel consumption, goods movement GHG emissions, and on-road GHG emissions are estimated to increase on a per capita basis between 2005 and 2035. Even though all feasible mitigation measures have been identified to reduce the level of impact, impacts ***cannot be mitigated to a less than significant level*** consistent with the findings of the 2011 RTP SEIR.

[1] http://www.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf

MITIGATION MEASURES & MITIGATION MONITORING PROGRAM

Based upon review of the project and review of the potential environmental effects, it has been determined that the proposed project does not create any new significant adverse environmental impacts outside of the scope of the analyses completed for the certified 2011 RTP SEIR or the SEIR for Amendment No. 1. Potential impacts and mitigation measures have been addressed in the 2011 RTP SEIR. The 2011 RTP, 2011 RTP SEIR, 2011 RTP Amendment No.1, and the 2011 RTP Draft SEIR Addendum prepared to address RTP Amendment No.1 can be found at www.kerncog.org and are on file at Kern COG offices.

The following section provides a discussion of the differences between the 2011 RTP SEIR, Amendment No. 1 SEIR Addendum and the proposed Amendment No. 2 Addendum EIR mitigation measures and mitigation monitoring program. Based on findings identified in Section 6 of the Draft EIR, projects contained in the 2011 RTP and the Air Quality Impact and Conformity Analysis, the preferred alternative was adopted as the Final 2011 RTP. This alternative was analyzed considering historical growth rates in vehicle miles traveled (VMT) and vehicle trips (VT), as well as anticipated growth in the use of other forms of transportation such as transit, rail, aviation, and non-motorized.

The project alternative (2011 RTP) was characterized as the "worst case" alternative considering traditional transportation system improvements. Improvement projects evaluated and identified under this alternative were "financially constrained" in accordance with the SAFETEA-LU federal surface transportation funding act and air quality conformity requirements. Further, the project focused on "traditional" land use planning activities, i.e., designation of planned growth and development consistent with established land use density policies. This includes the designation of urban development consistent with adopted local agency General Plans.

The project, 2011 RTP Amendment No. 2, will not differ from RTP Amendment No. 1 as the projects remain the same and changes to the opening years do not affect the models years of 2020 or 2035. The previous analysis in the SEIR completed for the 2011 RTP remains accurate and is included by reference in this Addendum EIR to the 2011 RTP SEIR. Therefore, all previous mitigation measures and the associated mitigation monitoring program remain unchanged from the 2011 RTP SEIR and are also incorporated by reference. All responsibilities for implementation of the mitigation measures and monitoring program will also remain the same.

OVERRIDING CONSIDERATIONS & UNAVOIDABLE ENVIRONMENTAL IMPACTS

Based upon review of the project and review of the potential environmental effects, it has been determined that the proposed project does not create any new significant adverse environmental impacts outside of the scope of the analyses completed for the certified 2011 RTP SEIR or the SEIR for Amendment No. 1. Potential impacts and mitigation measures have been addressed in the 2011 RTP SEIR. The 2011 RTP, 2011 RTP SEIR, 2011 RTP Amendment No.1, and the 2011 RTP Draft SEIR Addendum prepared to address RTP Amendment No.1 can be found at www.kerncog.org and are on file at Kern COG offices.

The following section discusses the Statement of Overriding Considerations and Unavoidable Environmental Impacts associated with the 2011 RTP as part of the certified 2011 RTP SEIR. Based on information set forth in the 2011 RTP Draft and Final EIR, and these findings of fact, Kern COG recognized that approval of the 2011 RTP, even with implementation of all the feasible mitigation measures, may result in significant effects on the environment. In compliance with CEQA, Kern COG found that the unavoidable significant adverse effects of the Project (2011 RTP) are overridden by the benefits of the Project and, therefore, made and adopted the Overriding Considerations. The previous analysis in the SEIR completed for the 2011 RTP remains valid, including the overriding considerations, and is included by reference in this Addendum EIR to the 2011 RTP SEIR.

APPROVALS REQUIRED

This Addendum EIR only contains changes necessary to make the previous 2011 RTP SEIR adequate, and the changes made by this Addendum EIR do not raise important new issues about the significant effects to the environment. This Addendum EIR need not be circulated for public review; however, Kern COG has decided to release the Addendum EIR and the 2011 RTP Amendment No. 2 for 45-day public review. Ultimately, the Addendum EIR will be included in or attached to the Final EIR.

Kern COG must decide whether to certify the Addendum EIR as the EIR for the 2011 RTP Amendment No. 2, prior to approving the proposed project.

SOURCES OF INFORMATION USED IN PREPARING THE ADDENDUM EIR

The Final SEIR for the 2011 RTP is composed of the following documents:

- 2007 Destination 2030 Regional Transportation Plan (RTP), Draft Environmental Impact Report (EIR), March 1, 2007;
- 2007 Destination 2030 RTP, Final EIR, Mitigation Monitoring and Reporting Program, and Statement of Overriding Considerations, May 17, 2007;
- 2007 Destination 2030 RTP Amendment No.1, Addendum EIR, January 15, 2009;
- 2007 Destination 2030 RTP Amendment No.1, January 15, 2009;
- 2007 Destination 2030 RTP Amendment No.2, Addendum EIR, September 17, 2009;
- 2007 Destination 2030 RTP Amendment No.2, September 17, 2009;
- 2011 RTP Draft SEIR, April 30, 2010;
- 2011 RTP Final SEIR, July 15, 2010;
- 2011 RTP, July 15, 2010;
- 2011 RTP Amendment No. 1
- Kern COG Staff: Mr. Robert Ball, Planning Division Director, Ms. Marilyn Beardslee, Senior Planner, Joe Stromaglia, Senior Planner, and Vincent Liu, Regional Planner III, personal communication, Jan/Feb., 2011; and
- State of California, Office of Planning and Research, California Environmental Quality Act (CEQA) Guidelines, 2010.

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Addendum No. 3
Environmental Impact Report

Regional Adoption
July 19, 2012

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July 19, 2012

INTRODUCTION

The Kern Council of Governments (Kern COG) has prepared a third amendment to the 2011 Regional Transportation Plan (2011 RTP Amendment No. 3). The 2011 RTP, adopted on July 15, 2010 by Kern COG, included a list financially constrained improvement projects. In May 2011, Kern COG amended the 2011 RTP (Amendment No. 1) to reflect changes to the list of projects and certified a Program Subsequent EIR (SEIR) to address potential environmental effects. Improvements from Amendment No. 1 to the 2011 RTP were revised again in January 2012 with the 2011 RTP Amendment No. 2. Amendment No. 2 that revised the map and description of the Bakersfield Beltway System to consist of three major roadways: 1) Central System, 2) West Beltway, and 3) North Beltway. Kern COG 2011 RTP Amendment No. 3 proposes the following minor adjustments to the schedule and costs for the project information previously provided in the 2011 RTP Amendment No. 2. All project limits remain the same. These changes are shown in Table 1.

- The SR 58 Gap Closure project has a revised cost estimate of $31 million and the construction start date has advanced from 2015 to 2013;
- The Hageman Flyover project has a revised construction start date of 2018;
- Cost estimates are revised for the projects shown below:
    a. SR 58 (Rosedale Highway) from Calloway Drive to Allen Road cost revised to $6 million, previously $8.8 million;
    b. SR 58 (Rosedale Highway) from SR 99 to Calloway Drive cost revised to $29 million, previously $24.2 million;
    c. SR 178 from Morning Drive to Vineland Road cost revised to $56 million, previously $58.8 million;
    d. SR 178 from Vineland Road to Miramonte Drive cost revised to $54 million, previously $50 million;
    e. Westside Parkway has a revised cost estimate of $304.9 million;
    f. Centennial Corridor has a revised cost estimate of $698 million, with a construction start date of 2016; and
    g. The Oak Street/24th Street Improvements project is combined with the 24th Street Widening project with a construction start date of 2014.

These revisions are due to normal project refinements that occur during the project development process. As

additional studies and services are completed in the environmental phases, project details in the RTP are adjusted to accurately reflect the current project scope, schedule and budget. As a result of these revisions, there are no changes to the net funding required during the period from 2011 to 2035 in the 2011 RTP Amendment No. 3. In addition, the total number and location of projects does not change from those previously approved.

CEQA PROVISIONS

As a part of Kern COG's current review of the RTP Amendment No. 3, it is necessary to identify any areas of the 2011 RTP SEIR that might be substantially impacted by changes in projects or policy direction. Section 15162 of the California Environmental Quality Act (CEQA) provides that "[the lead agency…shall prepare an addendum to a previously certified EIR if some changes or additions are necessary but none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have occurred. (CEQA Guidelines §15164(a)]". The referenced provision states that "no subsequent EIR shall be prepared for that project unless the lead agency determines, on the basis of substantial evidence in the light of the whole record, one or more of the following (CEQA Guidelines §15162(e):

- Substantial changes are proposed in the project, which will require major revisions of the previous EIR or Negative Declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;
- Substantial changes occur with respect to the circumstances under which the project is undertaken, which will require major revisions of the previous EIR or Negative Declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; and/or
- New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete or the Negative Declaration was adopted, shows any of the following:
  - The project will have one or more significant effects not discussed in the previous EIR or Negative Declaration;
  - Significant effects previously examined will be substantially more severe than shown in the previous EIR;
  - Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; and/or
  - Mitigation measures or alternatives, which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

An Addendum (for Amendment No. 3), has been prepared pursuant to the CEQA Guidelines §15164, Public Resources Code 21000, to the 2011 Regional Transportation Plan EIR (2011 RTP SEIR) certified on July 15, 2010, and serves as the EIR for the proposed 2011 RTP Amendment No. 3 (project). This Addendum EIR outlines the changes to the RTP, as analyzed in the 2011 RTP SEIR, the Addendum EIR prepared by VRPA Technologies, Inc. for the 2011 RTP Amendment No. 1, and the Addendum EIR prepared by Parsons for the

2011 RTP Amendment No. 2, and evaluates whether those changes, or new information or changed circumstances, would require substantial changes to the impacts identified or mitigation measures proposed.

Based upon review of the project and review of the potential environmental effects, Kern COG has determined that the proposed project does not create any new significant adverse environmental impacts outside of the scope of the analyses already contained in the previously certified 2011 RTP SEIR, the Addendum for Amendment No. 1 or the Addendum for Amendment No. 2. Since the proposed project would not generate any new significant adverse environmental impacts, another Addendum to the 2011 RTP SEIR has been prepared. The 2011 RTP, 2011 RTP SEIR, 2011 RTP Amendment No.1, 2011 RTP Amendment No.2 and the 2011 RTP Draft SEIR Addendums prepared to address RTP Amendment No.1 and RTP Amendment No. 2 can be found at www.kerncog.org and are on file at Kern COG offices.

PROJECT DESCRIPTION

2011 Regional Transportation Plan, Program Subsequent EIR, and 2011 RTP Amendment No. 3 Addendum EIR

The 2011 RTP is a planning guide containing transportation policy and projects for a 24-year period (through Fiscal Year 2034/35). The RTP is also used to guide development of the Regional Transportation Improvement Program (RTIP). The RTIP is the programming document used to plan the construction of regional transportation projects and requires California Transportation Commission (CTC) approval. Project-level assessment of environmental impacts was not addressed by the 2011 RTP SEIR nor have they been addressed in this RTP Amendment No. 3 Addendum EIR. The RTP is also used as a transportation planning document by each of the twelve member jurisdictions of Kern COG. The members include the County of Kern and the cities of Arvin, Bakersfield, California City, Delano, Maricopa, McFarland, Ridgecrest, Shafter, Taft, Tehachapi, and Wasco.

The RTP identifies the region's mobility needs and issues through to the year 2035, sets forth an action plan of projects and programs to address needs consistent with the adopted policies, and documents the financial resources needed to implement the plan. Additional areas of emphasis and policy initiatives in the 2011 RTP include Climate Change (including a Climate Change Plan and other greenhouse gas policies), Environmental Justice, Goods Movement, and Blueprint Planning. In addition, the 2011 RTP includes updated improvement project lists and updated performance measures. The 2011 RTP promotes a "balanced" transportation system. It calls for increased investments in alternative transportation modes, while accommodating a necessary amount of new highway capacity. Heavier emphasis on alternative modes, above and beyond those already incorporated in the RTP, may be desired or preferred but because of financial constraints, alternative mode additions are not financially feasible in the timeframe of the RTP.

The process to approve the 2011 RTP included: (1) assessing Kern County's transportation needs, identifying projects to address the needs, evaluating the projects considering benefit versus cost and other performance objectives, and addressing air quality conformity requirements; (2) conducting public hearings on the RTP by Kern COG, and certification of the 2011 RTP SEIR by Kern COG, and (3) approval of a resolution passed by Kern COG approving the 2011 RTP. Public involvement was encouraged and received throughout the 2011 RTP development process. The 2011 RTP consists of required elements and is organized into the following chapters:

- Chapter 1. Introduction;
- Chapter 2. Transportation Planning Policies;
- Chapter 3. Planning Assumptions;
- Chapter 4. Strategic Investments;
- Chapter 5. Financing Transportation;
- Chapter 6. Future Links;
- Chapter 7. Monitoring Progress;
- Chapter 8. References; and
- Appendices. (Includes the San Joaquin Valley Regional Transportation Overview and other required documents)

The RTP, in conjunction with General Plan Circulation Elements adopted by the County of Kern and each of the cities within the County, designates the location and scale of existing and proposed transportation systems. The financing program contained in the 2011 RTP considered a projection of funding sources that may be available to finance transportation improvement projects over time. The projection of funds in the 2011 RTP was accomplished considering historical allocations of federal, state and other funding.

To evaluate the regional impacts associated with the 2011 RTP, a Program Subsequent EIR (SEIR) was prepared and certified. CEQA guidelines (Section 15168) define a Program EIR as, "an EIR that may be prepared on a series of actions that can be characterized as one large project and are related either geographically, or are logical parts in the chain of contemplated actions, or are in connection with issuances of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program, or 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." After reviewing CEQA Section 15164 (referenced above), it was determined that the obligation to prepare another Subsequent or Supplemental EIR for Amendment No. 3 was not met and that an Addendum was the appropriate environmental document to address the 2011 RTP Amendment No. 3.

Amendment No. 3 to the 2011 RTP

The scope of the proposed RTP Amendment No. 3 will be targeted at incorporating project updates for the Metropolitan Bakersfield area, as well as the latest planning assumptions to air quality conformity. Proposed RTP Amendment No. 3 necessitates the preparation of a transportation/air quality conformity analysis and an Addendum to the 2011 RTP SEIR.

Amendment No. 3 provides the foundation to reflect the current project scope, schedule and budget refinements as a result of the normal project development process. There are no changes to the net funding required during the period from 2011 to 2035 in the 2011 RTP Amendment No. 3. In addition, the total number and location of projects does not change from those previously approved.

Project delivery schedules reflected in the 2011 RTP are proposed to be revised as part of RTP Amendment No. 3 as referenced in Table 1. Table 1 replaces Table 4.1 in the 2011 RTP. **Bolded** information in Table 1 reflects those projects that changed with RTP Amendment No. 3 in terms of project schedule and budget.

FINDINGS OF THE EIR

CEQA requires that a Final EIR be prepared, certified, and considered by decision-makers prior to taking action on a project. The Final EIR provides the local agency an opportunity to respond to comments received on the Draft EIR and to incorporate any changes or additions necessary to clarify and/or supplement the information contained in the document. The Final SEIR prepared for the 2011 RTP, therefore, represents the culmination of all environmentally related issues raised during the comment period on the Draft SEIR. In addition, the Final SEIR contains a Mitigation Monitoring and Reporting Program that identifies the necessary processes that are required to ensure that the mitigation measures recommended in the Draft SEIR are implemented. The Final

SEIR for the 2011 RTP is composed of the following documents:

- 2007 Destination 2030 Regional Transportation Plan (RTP), Draft Environmental Impact Report (EIR), March 1, 2007;
- 2007 Destination 2030 RTP, Final EIR, Mitigation Monitoring and Reporting Program, and Statement of Overriding Considerations, May 17, 2007;
- 2007 Destination 2030 RTP Amendment No.1, Addendum EIR, January 15, 2009
- 2007 Destination 2030 RTP Amendment No.1, January 15, 2009
- 2007 Destination 2030 RTP Amendment No. 2, Addendum EIR, September 17, 2009
- 2007 Destination 2030 RTP Amendment No. 2, September 17, 2009
- 2011 RTP Draft SEIR, April 30, 2010;
- 2011 RTP Final SEIR, July 15, 2010;
- 2011 RTP, July 15, 2010,
- 2011 RTP Amendment No. 1, Addendum SEIR, May 2011, and
- 2011 RTP Amendment No. 2, Addendum SEIR, January 2012.

The summary of mitigation measures and the mitigation monitoring program identified in the section *Summary of Mitigation Measures and Mitigation Monitoring Program* remain applicable considering changes reflected in this Addendum EIR.

TABLE 1

2011 through 2015 - Major Highway Improvements					
Project	Location		YOE Cost	Project ID	Start
Route 14	Inyokern	Redrock / Inyokern Rd to Rt 178 - widen to four lanes (Phase1)	42,000,000	KER08RTP006	2014
Route 46	Lost Hills	SLO County Line to Brown Material Rd - widen to four lanes (Phases 1 -3)	232,070,000	KER08RTP003	2009
Route 58	Metro Bkfd	Rosedale Hwy - Calloway Dr to Rt 99 - widen existing highway	**29,000,000**	KER08RTP007	2013
Route 58	Metro Bkfd	Rosedale Hwy - Allen Rd to Calloway Dr - widen existing highway	**6,000,000**	KER08RTP090	2013
Route 58	Bakersfield	SR 58 Gap Closure; element of Bakersfield Beltway System; Rt 99 to Cottonwood Rd. - widen existing highway	**31,000,000**	KER08RTP019	2013
Route 99	Metro Bkfd	Hosking Ave - construct interchange	35,000,000	KER08RTP009	2012
Route 99	Bakersfield	Wilson Rd to Rt 119 - widen to eight lanes	52,000,000	KER08RTP077	2012
Route 99	Bakersfield	Olive Drive - construct interchange upgrades	6,100,000	KER08RTP091	2012
Route 99	Bakersfield	Rt 204 to 7th Standard Rd - widen to eight lanes (Phase 1)	12,000,000	KER08RTP104	2012
Route 99	Delano	Woollomes Ave - construct interchange upgrades	5,000,000	KER08RTP114	2010
Route 178	Bakersfield	Morning Dr to Vineland Rd - new interchange with freeway	**56,000,000**	KER08RTP010	2013
Route 178	Bakersfield	Vineland Rd to east of Miramonte Dr - widen existing highway	**54,000,000**	KER08RTP011	2014
Challenger Dr. Ext.	Tehachapi	Viena St to Dennison Rd - construct new street	1,500,000	KER08RTP015	**2013**
W Ridgecrest Blvd	Ridgecrest	Mahan St to China Lake Blvd - widen to four lanes	10,200,000	KER08RTP001	**2013**
Westside Parkway	Metro Bkfd	Rt 99 / Oak St to Heath Rd - construct local freeway	**304,926,000**	KER08RTP004	2009
Hageman Grade Sep	Metro Bkfd	Hageman/Santa Fe Way @ BNSF - construct grade separation	39,500,000	KER08RTP117	2011
Centennial Corridor	Bakersfield	I-5 to Rt-58/Cottonwood Rd - element of the Bakersfield Beltway System - construct new freeway and/or operational improvements	**698,000,000**	KER08RTP020	**2016**
24th St Improvements	**Bakersfield**	**Rt 178 (24th/23rd St) from SR-99 to M Street - widen existing highway**	**55,000,000**	**KER08RTP014**	**2014**
		Sub-total	**$1,734,196,000**		

TABLE 1 (Continued)

2016 through 2020 - Major Highway Improvements						
Project		Location	Scope	YOE Cost	Project ID	Start
Hageman Flyover		**Bakersfield**	**Knudsen Dr to Rt 204 - construct extension**	**68,900,000**	**KER08RTP013**	**2018**
Route 14		Inyokern	Redrock / Inyokern Rd to Rt 178 - widen to four lanes (Phase 2)	42,000,000	KER08RTP017	2018
Route 46		Lost Hills	Brown Material Rd to I-5 - interchange upgrade at I-5 - Phase 4A	27,000,000	KER14RTP001	2016
			Sub-total	**$110,900,000**		
2021 through 2025 - Major Highway Improvements						
Project		Location	Scope	YOE Cost	Project ID	Start
Route 14		Inyokern	Redrock / Inyokern Rd to Rt 178 - widen to four lanes (Phase 3)	$32,000,000	KER08RTP024	2022
Route 58		Bakersfield	Rosedale Hwy - Rt 43 to Allen Rd - widen existing highway	59,000,000	KER08RTP092	2025
Route 58		Metro Bkfd	Rosedale Hwy @ Minkler Spur / Landco - construct grade separation	27,000,000	KER08RTP118	2025
Route 58		Bakersfield	Rt 99 to Cottonwood Rd - widen to eight lanes	47,400,000	KER08RTP093	2025
Route 65		Bakersfield	James Rd to Merle Haggard Dr - widen to four lanes	3,000,000	KER08RTP094	2021
Route 119		Taft	Cherry Ave to Elk Hills Rd (Phase 1, bypass) - widen to four lanes	115,000,000	KER08RTP022	2022
Route 178		Bakersfield	At Rt 204 - construct interchange	25,700,000	KER08RTP095	2025
Route 184		Bakersfield	At Union Pacific Railroad - construct grade separation	26,400,000	KER08RTP108	2025
US 395		Ridgecrest	Between Rt 178 and China Lake Blvd - construct passing lanes	20,000,000	KER08RTP089	2022
7th Standard Rd		Shafter/Bkfd	Rt 43 to Santa Fe Way - widen existing roadway	14,000,000	KER08RTP113	2025
West Beltway		Metro Bkfd	Rosedale Hwy to Westside Parkway - construct new facility	93,500,000	KER08RTP016	2025
			Sub-total	**$463,000,000**		

TABLE 1 (Continued)

2026 through 2030 - Major Highway Improvements						
Project		Location	Scope	YOE Cost	Project ID	Start
Route 46		Lost Hills	Brown Material Rd to I-5 - interchange upgrade at I-5 (Phase 4)	$70,000,000	KER08RTP018	2026
Route 119		Bakersfield	I-5 to Buena Vista - widen to four lanes	31,300,000	KER08RTP099	2026
Route 178		Metro Bkfd	West of Fairfax Rd to Vineland Rd - widen existing freeway	17,000,000	KER08RTP111	2028
Route 178		Bakersfield	Existing west terminus to Oswell St - widen to eight lanes	140,500,000	KER08RTP026	2026
Route 184		Bakersfield	Panama Rd to Rt 58 - widen to four lanes	10,500,000	KER08RTP100	2029
Route 184		Bakersfield	Morning Dr to Rt 178 - widen to four lanes	5,000,000	KER08RTP101	2026
Route 204		Bakersfield	Airport Drive to Rt 178 - widen existing highway	55,000,000	KER08RTP083	2030
Route 204		Bakersfield	F St - construct interchange	36,000,000	KER08RTP081	2030
			Sub-total	**$392,300,000**		
2031 through 2035 - Major Highway Improvements						
Project		Location	Scope	YOE Cost	Project ID	Start
Route 58		Bakersfield	At various locations - ramp improvements	$32,600,000	KER08RTP103	2033
Route 99		Bakersfield	At Olive Drive - reconstruct interchange	108,000,000	KER08RTP021	2033
Route 99		Bakersfield	At Snow Rd - construct new interchange	138,200,000	KER08RTP115	2033
Route 99		Bakersfield	Rt 204 to 7th Standard Rd - widen to eight lanes (Phase 2)	90,800,000	KER08RTP138	2033
Route 99		Bakersfield	At various locations - ramp improvements	37,000,000	KER08RTP105	2033
Route 119		Taft	Elk Hills - County Rd to Tupman Ave - widen to four lanes (Phase 2)	48,000,000	KER08RTP086	2033
Route 178		Metro Bkfd	Vineland to Miramonte - new interchange; widen existing freeway	119,000,000	KER08RTP025	2033
Route 178		Bakersfield	Miramonte to Rancheria - widen existing highway	19,800,000	KER08RTP084	2033
Route 178		Bakersfield	At Rt 204 and 178 - reconstruct freeway ramps	50,000,000	KER08RTP085	2033
Route 178		Bakersfield	At various locations - ramp improvements	37,000,000	KER08RTP106	2033
Route 184		Lamont	Rt 58 to Rt 178 - widen to four lanes	90,000,000	KER08RTP045	2033
West Beltway		Metro Bkfd	Pacheco Rd to Westside Parkway - construct new facility	115,793,000	KER08RTP139	2033
West Beltway		Metro Bkfd	Rosedale Hwy to 7th Standard Rd - construct new facility	115,793,000	KER08RTP102	2033
West Beltway		Metro Bkfd	Taft Hwy to Pacheco Rd - construct new facillity	90,000,000	KER08RTP097	2033
			Sub-total	**$1,091,986,000**		
			Total Major Highway Improvements	**$3,723,482,000**		

TABLE 1 (Continued)

2011 through 2035 - Transit						
Project		Location	Scope	YOE Cost	Project ID	Start
		Metro Bkd	Full size natural gas buses - 120 replacement buses	$45,000,000		
		Metro Bkd	Full size natural gas buses - 120 new buses	45,000,000		
		Various	Midsize natural gas buses - 120 replacement buses	6,000,000		
		Various	Midsize natural gas buses - 120 new buses	6,000,000		
		Various	Mini van / buses - 45 replacement buses	1,800,000		
		Metro Bkfd	2 transfer stations	3,000,000		
		Metro Bkfd	ITS related improvements / upgrades	3,000,000		
		Various	Park and Ride Lots (750 spaces)	3,000,000		
			Sub-total	**$112,800,000**		
2011 through 2035 - Non-motorized						
Project		Location	Scope	YOE Cost	Project ID	
Various locations		Metro Bkfd	Construct Class I or Class IIII Bike Path; striping; signage	$11,250,000		
Various locations		Metro Bkfd	Construct Pedestrian Enhancement Improvements	11,250,000		
Various locations		Countywide	Construct Class I or Class IIII Bike Path; striping; signage	7,500,000		
Various locations		Countywide	Construct Pedestrian Enhancement Improvements	7,500,000		
			Sub-total	**$37,500,000**		
2011 through 2035 - Freight Rail						
Project		Location	Scope	YOE Cost	Project ID	Start
Freight Rail		Tehachapi	Double-track sections from Bakersfield to Mojave	$111,700,000		In Progress
Freight Rail		Shafter	Shafter Intermodal Rail Facility	30,000,000		In Progress
			Sub-total	**$141,700,000**		

TABLE 1 (Continued)

2011 through 2035 - Passenger Rail*						
Project		Location	Scope	YOE Cost	Project ID	Start
Passenger Rail		Bakersfield	High Speed Rail Station - Bakersfield	50,000,000		2015
Passenger Rail		Region	High Speed Rail Alignment and Facilities Fresno to Bakersfield	819,500,000		2012
Passenger Rail		Region	High Speed Rail Alignment and Facilities Bakersfield to Palmdale	3,000,000,000		2015
Passenger Rail		Shafter/Wasco	High Speed Rail Heavy Maintenance Facility	450,000,000		2012
			Sub-total	**$4,319,500,000**		

*Passenger Rail Program is currently partially funded through the High Speed Rail Authority and is provided as information. Total is not included in summary.

2011 through 2035 - Summary of Constrained Projects	
Program Category	**Totals**
Major Highway Improvements 2011-2015	$1,734,196,000
Major Highway Improvements 2016-2035	1,989,286,000
Local Streets and Roads	1,311,000,000
Transit	112,800,000
Non-motorized	37,500,000
Passenger / Freight Rail	141,700,000
Grand Total	**$5,326,482,000**

FIGURE 1

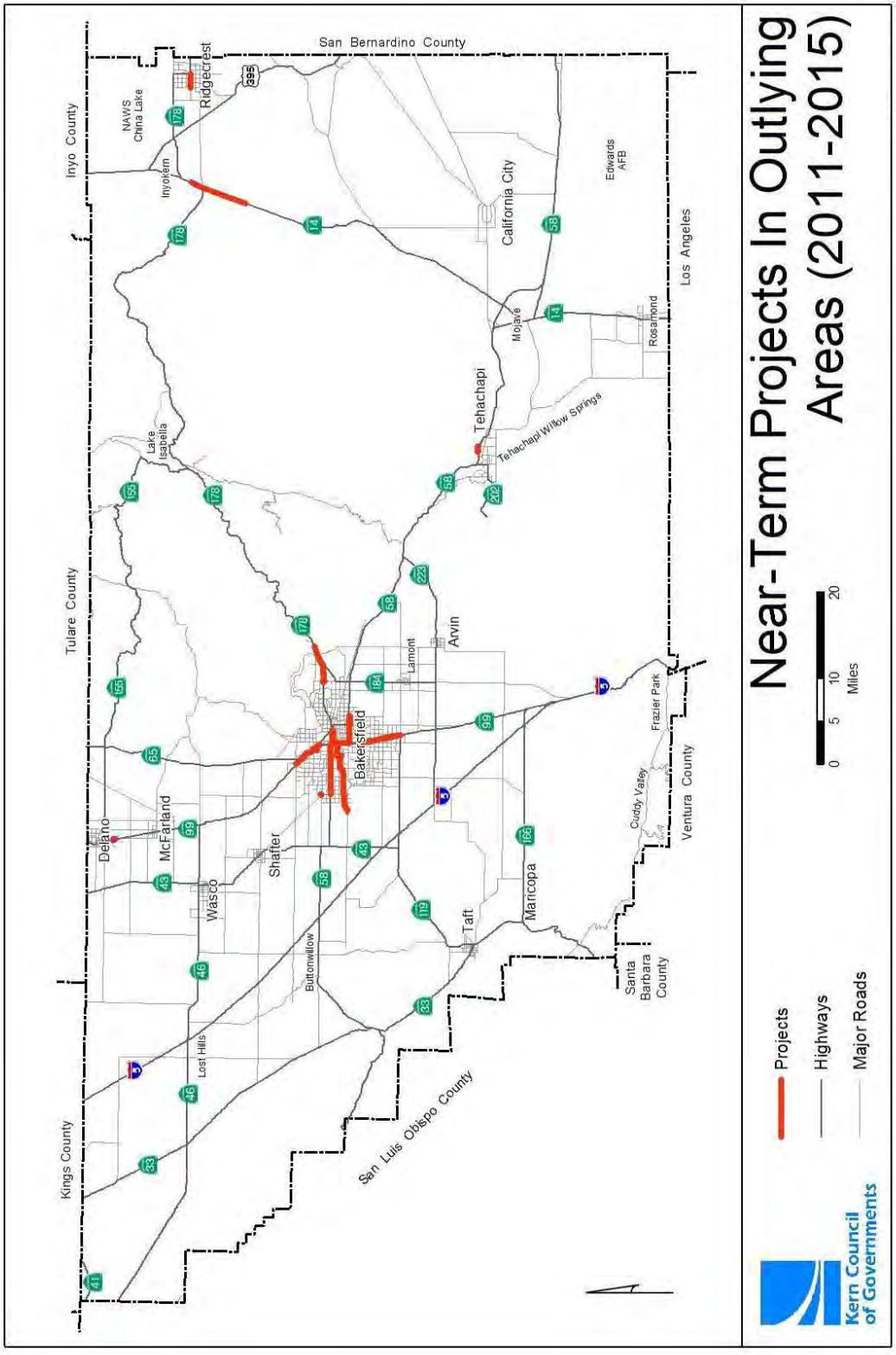

Near-Term Projects In Outlying Areas (2011-2015)
Projects
Highways
Major Roads
0 5 10 20
Miles
Kern Council of Governments
San Bernardino County
Inyo County
Tulare County
Kings County
San Luis Obispo County
Santa Barbara County
Ventura County
Los Angeles
Ridgecrest
NAWS China Lake
Inyokern
California City
Edwards AFB
Mojave
Rosamond
Tehachapi
Tehachapi Willow Springs
Lake Isabella
Arvin
Lamont
Bakersfield
Frazier Park
Cuddy Valley
Delano
McFarland
Shafter
Wasco
Buttonwillow
Lost Hills
Taft
Maricopa

FIGURE 2

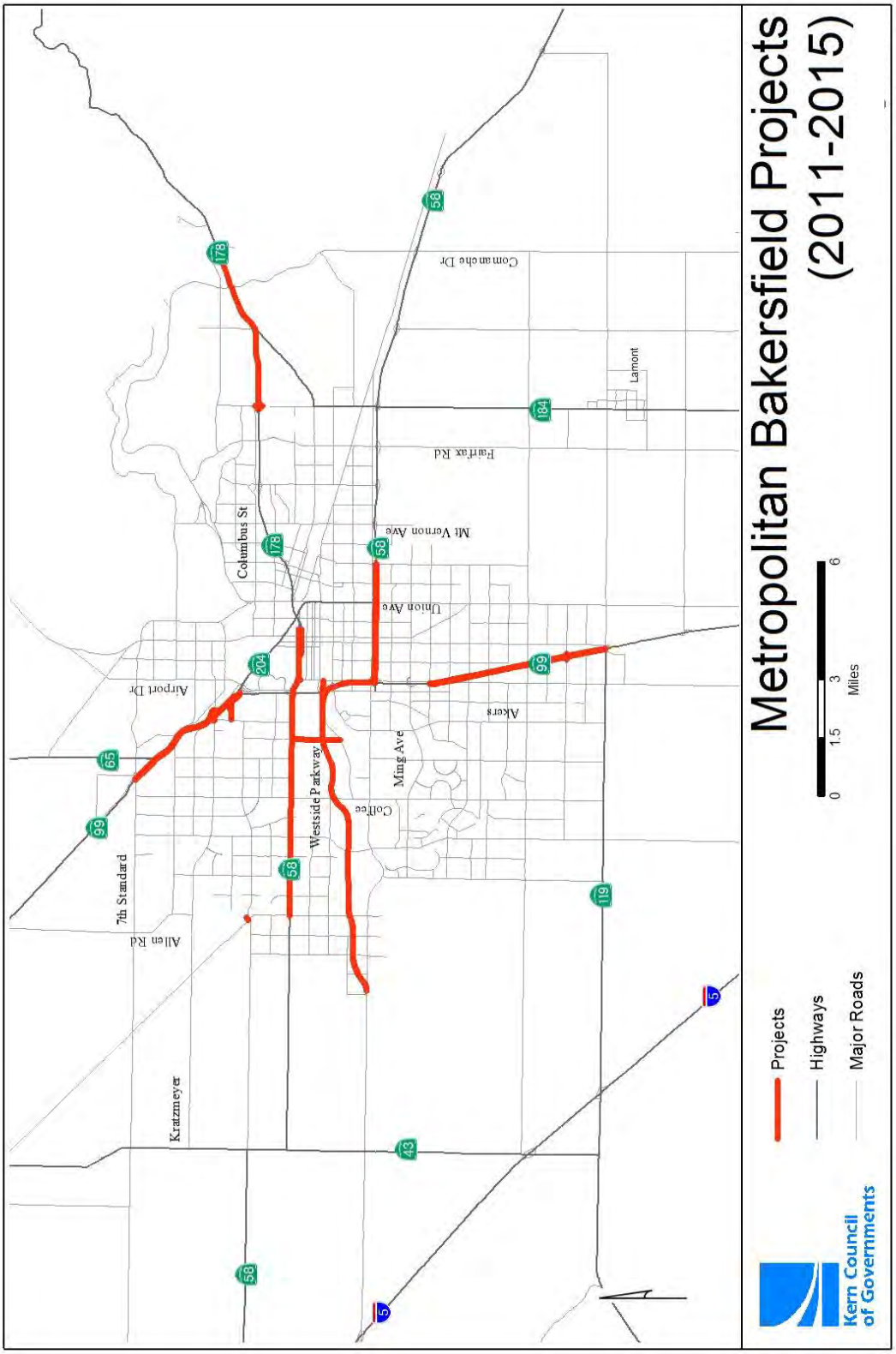

Metropolitan Bakersfield Projects
(2011-2015)
Projects
Highways
Major Roads
0
1.5
3
6
Miles
Kern Council of Governments
Comanche Dr
Lamont
Fairfax Rd
Mt Vernon Ave
Union Ave
Columbus St
Airport Dr
Akers
Ming Ave
Westside Parkway
Coffee
7th Standard
Allen Rd
Kratzmeyer
178
58
184
204
99
65
119
43
5

FIGURE 3

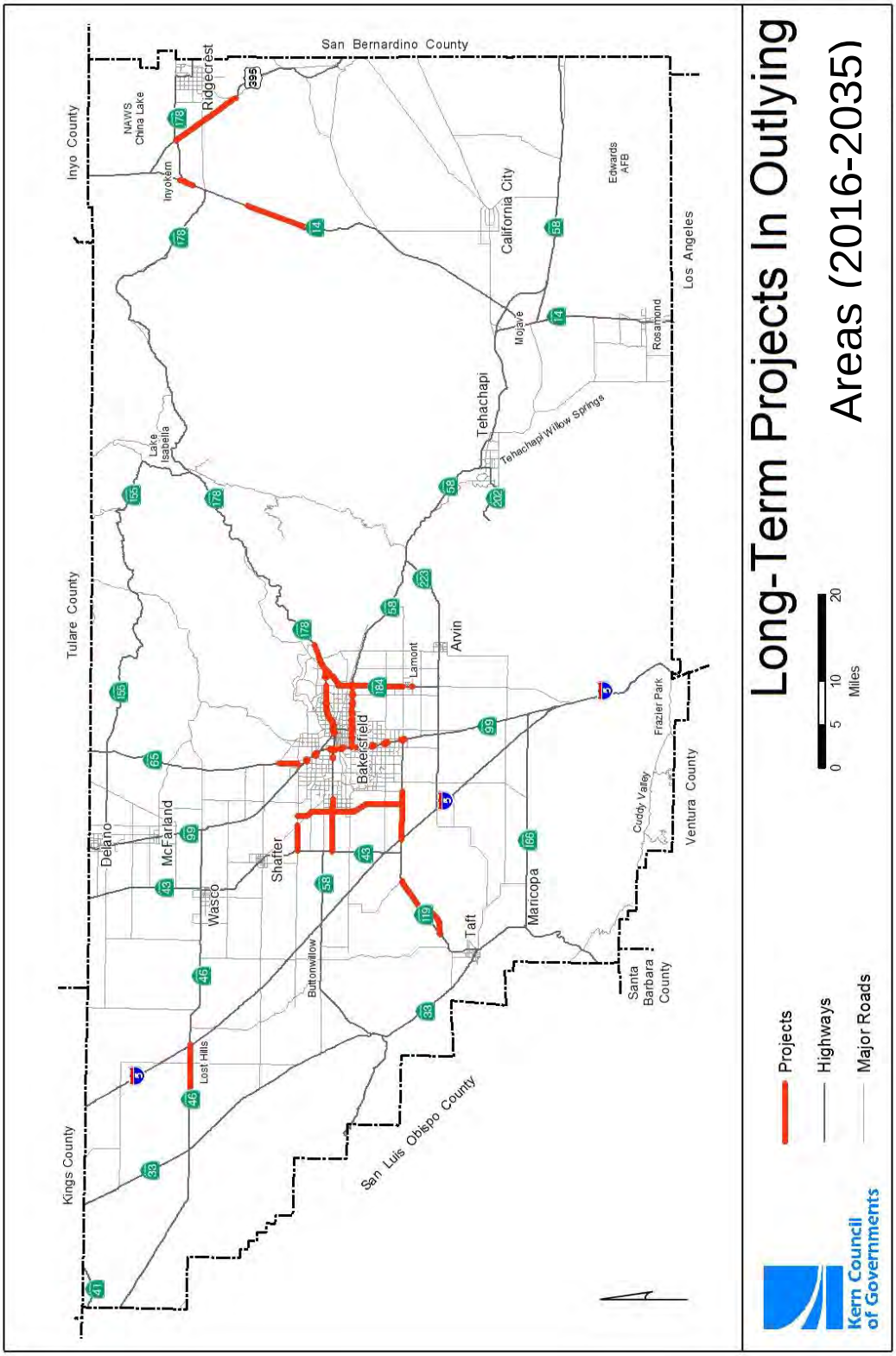
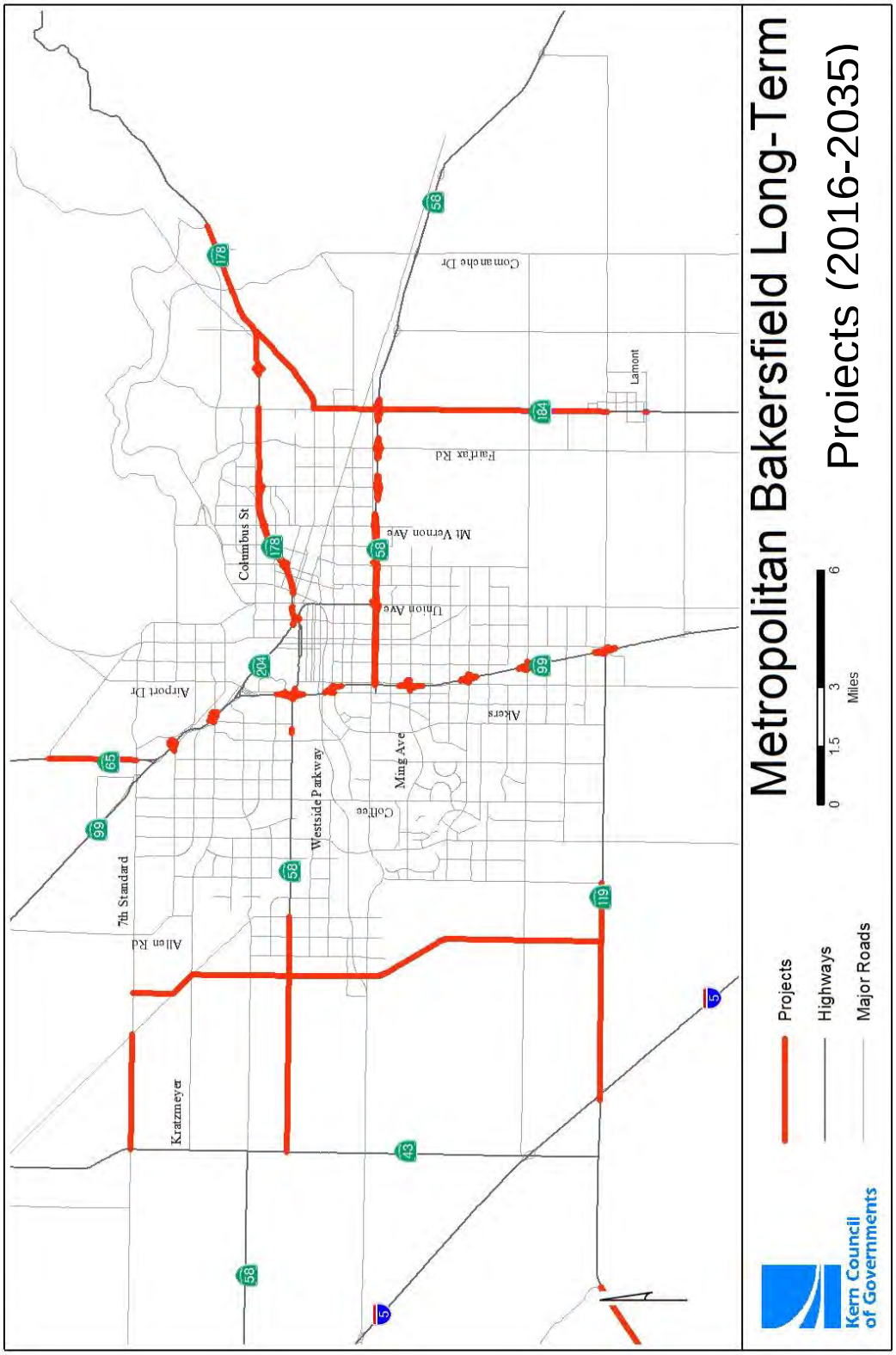

Long-Term Projects In Outlying Areas (2016-2035)
San Bernardino County
Inyo County
Tulare County
Kings County
San Luis Obispo County
Santa Barbara County
Ventura County
Los Angeles
Ridgecrest
NAWS China Lake
Inyokern
California City
Edwards AFB
Mojave
Rosamond
Tehachapi
Tehachapi Willow Springs
Lake Isabella
Arvin
Lamont
Bakersfield
Frazier Park
Cuddy Valley
Delano
McFarland
Shafter
Wasco
Buttonwillow
Lost Hills
Taft
Maricopa
Projects
Highways
Major Roads
0 5 10 20
Miles
Kern Council of Governments

FIGURE 4


Metropolitan Bakersfield Long-Term Projects (2016-2035)
Projects
Highways
Major Roads
0
1.5
3
6
Miles
Kern Council of Governments
Comanche Dr
Lamont
Fairfax Rd
Mt Vernon Ave
Columbus St
Union Ave
Airport Dr
Akers
Ming Ave
College
Westside Parkway
7th Standard
Allen Rd
Kratzmeyer
178
58
184
204
99
65
119
43
5

CHANGES TO THE 2011 RTP

The purpose of this Addendum EIR is to reflect changes and additions to the previously certified 2011 RTP SEIR and Addendum EIR for RTP Amendment No. 1. Considering CEQA provisions detailed previously, the 2011 RTP Amendment No. 3 will not result in further environmental impacts based upon the following conclusions:

- 2011 RTP Amendment No. 3 will not cause additional significant environmental effects addressed in the SEIR other than those already identified;
- The effects referenced in the 2011 RTP SEIR will not be substantially more severe as a result of changes identified in the 2011 RTP Amendment No. 3; and
- Mitigation measures contained in the 2011 RTP SEIR would continue to be feasible and would reduce environmental effects of changes referenced in this Addendum EIR.

While the proposed changes to the 2011 RTP may represent "*New information of substantial importance*…" as stated in 15162(a)(3), these changes will not result in one or more significant effects that are not already discussed in the previous EIRs, nor result in impacts that are substantially more severe than shown in the 2011 RTP EIR. Based upon the findings described above, RTP Amendment No. 3 will not require major revisions of the 2011 RTP SEIR for the following reasons:

- Potential impacts and mitigation factors have been adequately addressed in the certified 2011 RTP SEIR and reviewed in this Addendum EIR;
- Each individual transportation project referenced in the 2011 RTP, RTP Amendment No. 1 and in RTP Amendment No.2 will be evaluated by the responsible local agency to identify potential environmental effects; and
- After reviewing CEQA Section 15164, it has been determined that the obligation to prepare a Supplemental or Subsequent EIR is not met.

To further justify that changes reflected in the 2011 RTP Amendment No. 3 will not cause additional environmental effects or require changes to mitigation measures contained in the 2011 RTP SEIR, in the RTP Amendment No. 1 Addendum SEIR, or in the RTP Amendment No. 2 Addendum SEIR the following sections have been prepared.

Project Schedule and Cost Refinements

Modifications and adjustments associated with 2011 RTP Amendment No. 3 do not require revising the environmental analysis in the SEIR for the base year (2011) or the RTP Horizon Year of 2035. The environmental areas that require interim year analysis include only Air Quality (Section 3.3) and Climate Change (Section 3.5). Amendment No. 3 provides the foundation to reflect the current project scope, schedule and budget refinements as a result of the normal project development process. There are no changes to the net funding required during the period from 2011 to 2035 in the 2011 RTP Amendment No. 3. In addition, the total number and location of projects does not change from those previously approved.

Project delivery schedules and cost estimates reflected in the 2011 RTP are proposed to be revised as part of

RTP Amendment No. 3 as referenced in Table 1. Table 1 replaces Table 4.1 in the 2011 RTP. **Bolded** information in Table 1 reflects those projects that changed with RTP Amendment No. 3 in terms of project scope, schedule and budget as reflected in Table 1. Changes to the construction start dates do not affect the modeling years of 2020 or 2035. To reflect the most current environmental analysis, only Air Quality Conformity has been revised. All other Environmental Analyses do not warrant revisions and remain valid. Based upon the results of the Air Quality Conformity analysis, changes reflected in the 2011 RTP Amendment No. 3 will not cause additional environmental effects referenced in the 2011 RTP SEIR.

Air Quality Conformity

Modifications and adjustments associated with 2011 RTP Amendment No. 3 do not require revising the environmental analysis in the SEIR for the base year (2011) or the RTP Horizon Year of 2035. The environmental areas that require interim year analysis include only Air Quality (Section 3.3) and Climate Change (Section 3.5). Amendment No. 3 provides the foundation to reflect the current project scope, schedule and budget refinements as a result of the normal project development process and are reflected in Table 1. Changes to the construction start dates do not affect the modeling years of 2020 or 2035. The previous analysis in the 2011 RTP SEIR remains valid and is included by reference in this Addendum EIR to the 2011 RTP SEIR. To reflect the most current environmental analysis, only Air Quality Conformity has been revised. Based upon the results of the Air Quality Conformity analysis, changes reflected in the 2011 RTP Amendment No. 3 will not cause additional environmental effects referenced in the 2011 RTP SEIR.

An important consideration in determining whether or not the changes reflected in Table 1 will result in additional significant impacts is the issue of air quality conformity. Tables 2 through 9 identify air quality conformity analysis results for the San Joaquin Valley Air Basin and East Kern County Air Basin of Kern County including the projected emissions of hydrocarbons, nitrogen oxides, carbon monoxide, volatile organic gases, and particulate emissions for the project compared with the base or the emissions budgets for various years. The analysis shows that emissions related to the projects contained in Table 1 does not exceed the base and budget thresholds established by EPA.

Results of the Conformity Analysis

A regional emissions analysis was conducted for the years 2011, 2012, 2014, 2017, 2018 (via interpolation), 2020, 2023, 2025 and 2035 for each applicable pollutant. All analyses were conducted using the latest planning assumptions and emissions models. The major conclusions of the Kern Council of Governments Conformity Analysis are:

- For carbon monoxide, the total regional on-road vehicle-related emissions associated with implementation of the 2013 FTIP and the 2011 RTP Amendment No. 3 for the analysis years are projected to be less than the approved emissions budget established in the *2004 Revision to the California State Implementation Plan for Carbon Monoxide*. The applicable conformity test for carbon monoxide is therefore satisfied.
- For ozone, the total regional on-road vehicle-related emissions (ROG and NOx) associated with

implementation of the 2013 FTIP and the 2011 RTP Amendment No. 3 for all years tested are projected to be less than the approved emissions budgets specified in the *2007 Ozone Plan (as revised in 2011)*. The conformity tests for ozone are therefore satisfied.

- For PM-10, the total regional vehicle-related emissions (PM-10 and NOx) associated with implementation of the 2013 FTIP and the 2011 RTP Amendment No. 3 for all years tested are either (1) projected to be less than the approved emissions budgets, or (2) less than the emission budgets using the approved PM-10 and NOx trading mechanism for transportation conformity purposes from the *2007 PM-10 Maintenance Plan*. The conformity tests for PM-10 are therefore satisfied.
- For PM2.5, the total regional on-road vehicle-related emissions associated with implementation of the 2013 FTIP and the 2011 RTP Amendment No. 3 for the analysis years are either (1) projected to be less than the approved emission budgets, or (2) less than the emission budgets using the approved PM2.5 and NOx trading mechanism for transportation conformity purposes from the *2008 PM2.5 Plan (as revised in 2011)*. The conformity tests for PM2.5 for both the 1997 and 2006 standards are therefore satisfied.
- The 2013 FTIP and the 2011 RTP Amendment No. 3 will not impede and will support timely implementation of the TCMs that have been adopted as part of applicable air quality implementation plans. The current status of TCM implementation is documented in Chapter 4 of this report.
- Since the local SJV procedures (e.g., Air District Rule 9120 Transportation Conformity) have not been approved by EPA, consultation has been conducted in accordance with Federal requirements.

Regional emissions analyses were also conducted for 2011 (for interpolation only), 2013 (via interpolation), 2015, 2025, and 2035 for the Eastern Kern ozone area and the Indian Wells Valley PM-10 area; other years have been determined by interpolating between the years for which the regional emissions analysis is performed in accordance with the Federal conformity transportation regulation. No emissions analysis was completed for the portion of the SJV PM-10 nonattainment area that is under Kern County Air Pollution Control District jurisdiction (East Kern PM-10 Area).

- For Mojave Desert ozone, the total regional on-road vehicle-related emissions (ROG and NOx) associated with implementation of the 2013 FTIP and the 2011 RTP Amendment No. 3 for all years tested are projected to be less than the adequate emissions budgets specified in the 8-Hour Ozone Early Progress Plan. The conformity tests for ozone are therefore satisfied.
- For Indian Wells Valley PM-10, the total regional vehicle-related emissions associated with implementation of the 2013 FTIP and the 2011 RTP Amendment No. 3 for all years tested are projected to be less than the approved emissions budgets from the PM-10 Attainment Demonstration, Maintenance Plan, and Redesignation Request. The conformity tests for PM-10 are therefore satisfied.
- For the portion of the SJV PM-10 nonattainment area that is under the jurisdiction of the Kern County APCD (East Kern PM-10 Area), the interim emissions test is satisfied for all years since the transportation projects and planning assumptions in both the "action" and "baseline" scenarios are exactly the same. In accordance with Section 93.119(g)(2), the emissions predicted in the "action" scenario are not greater than the emissions predicted in the "Baseline" scenario for such analysis years. The conformity tests for PM-10 are therefore satisfied.

Based on the conformity analysis, the 2011 FTIP and the 2011 RTP Amendment No. 3 conforms to the applicable State Implementation Plan (SIP) and all applicable sections of the EPA's Transportation

Conformity Rule.

- State Air Quality Standards

The SJVAPCD and EKCAPCD are two of 35 air quality management districts that have prepared air quality management plans to accomplish a five percent annual reduction in emissions documenting progress toward achievement of the state ambient air quality standards.

The District air quality management plans document required emissions reductions from all emissions sources, mobile and stationary. For this analysis, only on-road mobile source emissions are considered, as the 2011 RTP Amendment No. 3 does not impact the implementation of any SJVAPCD regulations or incentives on other emissions source categories. As such, this analysis will not show the entire five percent reductions required by each of the District plans (for each applicable pollutant), but, will show the on-road mobile source share of the five percent per year reductions resulting from each of the District Plans. Required reductions from all other emissions sources can be found in the applicable District Plan.

The 2011 RTP Amendment No. 3 demonstrates compliance with the list of comprehensive regulatory and incentive based measures contained in each plan by demonstrating that motor vehicle emissions resulting from the 2011 RTP Amendment No. 3 are less than specified motor vehicle emissions "budgets" contained in the applicable District plans (2007 Ozone Plan, 2008 $PM_{2.5}$ Plan, and 2007 PM_{10} Maintenance Plan, which relies on the 2003 PM_{10} Plan for emissions reductions measures). To document compliance with the State air quality standards, each of these District plans identifies specific years in which progress toward attainment of the standard must be measured. These years are described as "budget" years because each of these District plans identifies motor vehicle emission "budgets" in which 2011 RTP Amendment No. 3 motor vehicle emissions cannot exceed in order to ensure continued progress toward attainment of the State standard. For on-road mobile sources, the District plans identify the same emissions reduction strategies for both State and federal standards.

TABLE 2

Conformity Results for RTP Projects

The SJVAPCD 2007 PM_{10} Maintenance Plan, which relies on the 2003 PM_{10} Plan for emissions reductions measures allows trading from the motor vehicle emissions "budget" for the PM_{10} precursor NOx to the motor vehicle emissions budget for primary PM_{10} using a 1.5 to 1 ratio. The trading mechanism allows the agencies responsible for demonstrating transportation conformity in the San Joaquin Valley to supplement the 2005 budget for PM_{10} with a portion of the 2005 budget for NOx, and use these adjusted motor vehicle emissions budgets for PM_{10} and NOx to demonstrate transportation conformity with the PM_{10} Maintenance Plan for analysis years after 2005. The approved PM_{10} trading mechanism recognizes NOx precursor emissions result in the formation of PM_{10} emissions at a rate of 1 ton of PM_{10} for every 1.5 tons of NOx.

Documentation of this can be found in the 2011 Conformity Analysis for the 2011 RTP Amendment No. 3.

Similar to the analysis documenting compliance with federal standards, the term "budget" after scenario year represents a not to exceed value. The term base year after a scenario year in the tables below also reflects a not to exceed value against which future emissions from the 2011 RTP Amendment No. 3 are measured.

For this analysis, only on-road mobile sources are considered as the 2011 RTP Amendment No. 3 does not impact the implementation of any SJVAPCD or EKCAPCD regulations or incentives on other emissions source categories.

Results of the Analysis

TABLE 5

Ozone, ROG, and NO_X Emissions Test – Kern SJVAB
(Summer Tons per Day)

	Emissions (Tons/Day)		%Below Budget		% Reduction/Year	
	ROG	NOX	ROG	NOX	ROG	NOX
2011 Budget	**12.7**	**50.3**	**N/A**	**N/A**	**N/A**	**N/A**
2011	11.1	43.2	12.60%	14.12%	-	-
2014 Budget	**9.7**	**42.7**	**N/A**	**N/A**	**N/A**	**N/A**
2014	8.2	35.8	15.46%	16.16%	8.71%	5.71%
2017 Budget	**8.7**	**31.7**	**N/A**	**N/A**	**N/A**	**N/A**
2017	7.3	25.6	16.09%	19.24%	3.66%	9.50%
2020	6.9	19.7	20.69%	37.85%	1.83%	7.68%
2023	6.7	14.2	22.99%	55.21%	0.97%	9.31%
2025	6.4	11.9	26.44%	62.46%	2.24%	8.10%
2035	6.0	9.8	31.03%	69.09%	0.63%	1.76%

Source: Kern COG, 2011

TABLE 6

Ozone, ROG, and NO_X Emissions Test – Eastern Kern
(Summer Tons per Day)

	Emissions (Tons/Day)		%Below Budget		% Reduction/Year	
	ROG	NOX	ROG	NOX	ROG	NOX
2008 Budget	5.0	18.0	N/A	N/A	N/A	N/A
2011	3.0	13.0	40.00%	27.78%	-	-
2015	3.0	9.0	40.00%	50.00%	0.00%	7.69%
2025	2.0	5.0	60.00%	72.22%	3.33%	4.44%
2035	2.0	5.0	60.00%	72.22%	0.00%	0.00%

Source: Kern COG, 2011

TABLE 7

PM_{10} Emissions – Kern SJVAB
(Annual Tons per Day)

	Emissions (Tons/Day)		%Below Budget		% Reduction/Year	
	ROG	NOX	ROG	NOX	ROG	NOX
2020 Budget	14.7	39.5	N/A	N/A	N/A	N/A
2020	12.7	34.1	13.61%	13.67%	-	-
2020 Budget	14.7	39.5	N/A	N/A	N/A	N/A
2025	12.9	25.6	12.24%	35.19%	0.00%	4.99%
2020 Adjusted Budget	16.6	36.7	N/A	N/A	N/A	N/A
2035	16.6	23.3	0.00%	36.51%	0.00%	0.90%

Source: Kern COG, 2011

TABLE 8

PM_{10} Emissions – Eastern Kern (Indian Wells Valley)
(Annual Tons per Day)

	Emissions (Tons/Day)	%Below Budget	% Reduction/Year
	PM10	PM10	PM10
2001 Budget	1.6	N/A	N/A
2011	1.2	25.00%	-
2013 Budget	1.7	N/A	N/A
2013	1.0	41.18%	-
2015	0.9	47.06%	5.00%
2025	1.1	35.29%	0.00%
2035	1.3	23.53%	0.00%

Source: Kern COG, 2011

TABLE 9

$PM_{2.5}$ Emissions – SJVAB
1997 $PM_{2.5}$ - 24-Hour & Annual Standards and 2006 24-Hour Standard

	Emissions (Tons/Day)		%Below Budget		% Reduction/Year	
	ROG	NOX	ROG	NOX	ROG	NOX
2012 Budget	**1.9**	**48.9**	**N/A**	**N/A**	**N/A**	**N/A**
2012	1.6	42.4	15.79%	13.29%	-	-
2014 Budget	**1.2**	**43.8**	**N/A**	**N/A**	**N/A**	**N/A**
2014	1.0	37.8	16.67%	13.70%	18.75%	3.62%
2014 Budget	**1.2**	**43.8**	**N/A**	**N/A**	**N/A**	**N/A**
2017	0.6	22.1	50.00%	49.54%	13.33%	13.84%
2014 Budget	**1.2**	**43.8**	**N/A**	**N/A**	**N/A**	**N/A**
2025	1.1	15.4	8.33%	64.84%	0.00%	3.79%
2014 Adjusted Budget	1.3	42.9	**N/A**	**N/A**	**N/A**	**N/A**
2035	1.3	18.5	0.00%	56.88%	0.00%	0.00%

Source: Kern COG, 2011

Significance After Mitigation

The Project will result in beneficial effects of system-wide improvement in traffic flows and reduced congestion, which would reduce the potential for increased air emissions. The SJVAPCD and EKCAPCD Plans all document the Districts' plans to achieve the State ambient air quality standards, and as such, compliance with the regulations and incentives contained in the plans results in compliance with the State ambient air quality standards. Based on the air quality analysis, the 2011 RTP Amendment No. 3 conforms to the applicable SJVAPCD and EKCAPCD plans and demonstrates progress toward attainment with the State ambient air quality standards for PM_{10}, $PM_{2.5}$ and Ozone. As a result, implementation of the 2011 RTP Amendment No. 3 would result in a ***less than significant*** impact to PM_{10}, $PM_{2.5}$, and Ozone consistent with the finding made in the 2011 RTP SEIR. While the 2011 RTP Amendment No. 3 does contribute to an ongoing violation, it does not impede the above referenced plans and regulations. It is understood that the air quality in the Kern County needs significant improvement. To that end, this Addendum EIR identifies all feasible mitigation measures to improve air quality and will not create a new violation or worsen existing violations.

Climate Change

Modifications and adjustments associated with 2011 RTP Amendment No. 3 do not require revising the environmental analysis in the SEIR for the base year (2011) or the RTP Horizon Year of 2035. The environmental areas that require interim year analysis include only Air Quality (Section 3.3) and Climate Change (Section 3.5). Amendment No. 3 revises nine projects as reflected in Table 1. Changes to the construction start dates do not affect the modeling years of 2020 or 2035. The previous analysis in the 2011 RTP SEIR remains valid and is included by reference in this Addendum EIR to the 2011 RTP SEIR.

Increased Transportation GHG Emissions May Cause Climate Change

The ultimate sources of increased transportation emissions in Kern County are population and employment growth, which will increase with or without projects referenced in the 2011 RTP. Kern COG does not implement land use policy in Kern County; rather, this is under the jurisdiction of the County and the various cities. Decisions about the place, pace, and scale of growth and development are reflected in the general plans and project approvals adopted by the local agencies. The 2011 RTP is designed to complement, rather than change, the plans adopted by the local agencies. Thus, the ultimate effect of the 2011 RTP on transportation emissions is not to increase the amount of travel per se, but rather to influence where and how travel occurs within and through the County.

CO2 Emissions

Emissions associated with the 2011 RTP Amendment No. 3 will not differ from RTP Amendment No. 1 or Amendment No. 2. Amendment No. 3 provides the foundation to reflect the current project scope, schedule and budget refinements as a result of the normal project development process. There are no changes to the net funding required during the period from 2011 to 2035 in the 2011 RTP Amendment No. 3. In addition, the total number and location of projects does not change from those previously approved. Project delivery schedules and cost estimates reflected in the 2011 RTP are proposed to be revised as part of RTP Amendment No. 3 as referenced in Table 1. Changes to the construction start dates do not affect the modeling years of 2020 or 2035. Consistency with AB 32 will be evaluated by reviewing the Scoping Plan[1] and evaluating whether the actions in the 2011 RTP and the 2011 RTP Amendment No. 3 will in any way impede implementation of the Scoping Plan.

Significance After Mitigation

Mitigation measures are presented above that will reduce GHG emissions to the extent feasible considering requirements set forth in AB 32. Such measures will also assist in the promotion and implementation of Smart Growth and sustainable planning practices by the cities and the County. While such feasible mitigation measures will reduce GHG impacts, fuel consumption, goods movement GHG emissions, and on-road GHG emissions are estimated to increase on a per capita basis between 2005 and 2035. Even though all feasible

[1] http://www.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf

mitigation measures have been identified to reduce the level of impact, impacts ***cannot be mitigated to a less than significant level*** consistent with the findings of the 2011 RTP SEIR.

MITIGATION MEASURES & MITIGATION MONITORING PROGRAM

Based upon review of the project and review of the potential environmental effects, it has been determined that the proposed project does not create any new significant adverse environmental impacts outside of the scope of the analyses completed for the certified 2011 RTP SEIR, or the SEIR for Amendment No. 1. Potential impacts and mitigation measures have been addressed in the 2011 RTP SEIR. The 2011 RTP, 2011 RTP SEIR, 2011 RTP Amendment No.1, 2011 RTP Amendment No.2 and the 2011 RTP Draft SEIR Addendums prepared to address RTP Amendment No.1 and RTP Amendment No. 2 can be found at www.kerncog.org and are on file at Kern COG offices.

The following section provides a discussion of the differences between the 2011 RTP SEIR, Amendment No. 1 and Amendment No. 2 SEIR Addendums and the proposed Amendment No. 3 Addendum EIR mitigation measures and mitigation monitoring program. Based on findings identified in Section 6 of the Draft EIR, projects contained in the 2011 RTP and the Air Quality Impact and Conformity Analysis, the preferred alternative was adopted as the Final 2011 RTP. This alternative was analyzed considering historical growth rates in vehicle miles traveled (VMT) and vehicle trips (VT), as well as anticipated growth in the use of other forms of transportation such as transit, rail, aviation, and non-motorized.

The project alternative (2011 RTP) was characterized as the "worst case" alternative considering traditional transportation system improvements. Improvement projects evaluated and identified under this alternative were "financially constrained" in accordance with the SAFETEA-LU federal surface transportation funding act and air quality conformity requirements. Further, the project focused on "traditional" land use planning activities, i.e., designation of planned growth and development consistent with established land use density policies. This includes the designation of urban development consistent with adopted local agency General Plans.

The project, 2011 RTP Amendment No. 3, will not differ from RTP Amendment No. 1 or Amendment No. 2 as the projects remain the same and changes to the opening years do not affect the models years of 2020 or 2035. The previous analysis in the SEIR completed for the 2011 RTP remains accurate and is included by reference in this Addendum EIR to the 2011 RTP SEIR. Therefore, all previous mitigation measures and the associated mitigation monitoring program remain unchanged from the 2011 RTP SEIR and are also incorporated by reference. All responsibilities for implementation of the mitigation measures and monitoring program will also remain the same.

OVERRIDING CONSIDERATIONS & UNAVOIDABLE ENVIRONMENTAL IMPACTS

Based upon review of the project and review of the potential environmental effects, it has been determined that the proposed project does not create any new significant adverse environmental impacts outside of the scope of

the analyses completed for the certified 2011 RTP SEIR or the SEIR for Amendment No. 1. Potential impacts and mitigation measures have been addressed in the 2011 RTP SEIR. The 2011 RTP, 2011 RTP SEIR, 2011 RTP Amendment No.1, 2011 RTP Amendment No. 2 and the 2011 RTP Draft SEIR Addendums prepared to address RTP Amendment No.1 and RTP Amendment No. 2 can be found at www.kerncog.org and are on file at Kern COG offices.

The following section discusses the Statement of Overriding Considerations and Unavoidable Environmental Impacts associated with the 2011 RTP as part of the certified 2011 RTP SEIR. Based on information set forth in the 2011 RTP Draft and Final EIR, and these findings of fact, Kern COG recognized that approval of the 2011 RTP, even with implementation of all the feasible mitigation measures, may result in significant effects on the environment. In compliance with CEQA, Kern COG found that the unavoidable significant adverse effects of the Project (2011 RTP) are overridden by the benefits of the Project and, therefore, made and adopted the Overriding Considerations. The previous analysis in the SEIR completed for the 2011 RTP remains valid, including the overriding considerations, and is included by reference in this Addendum EIR to the 2011 RTP SEIR.

APPROVALS REQUIRED

This Addendum EIR only contains changes necessary to make the previous 2011 RTP SEIR adequate, and the changes made by this Addendum EIR do not raise important new issues about the significant effects to the environment. This Addendum EIR need not be circulated for public review; however, Kern COG has decided to release the Addendum EIR and the 2011 RTP Amendment No. 3 for 45-day public review. Ultimately, the Addendum EIR will be included in or attached to the Final EIR.

Kern COG must decide whether to certify the Addendum EIR as the EIR for the 2011 RTP Amendment No. 3, prior to approving the proposed project.

SOURCES OF INFORMATION USED IN PREPARING THE ADDENDUM EIR

The Final SEIR for the 2011 RTP is composed of the following documents:

- 2007 Destination 2030 Regional Transportation Plan (RTP), Draft Environmental Impact Report (EIR), March 1, 2007;
- 2007 Destination 2030 RTP, Final EIR, Mitigation Monitoring and Reporting Program, and Statement of Overriding Considerations, May 17, 2007;
- 2007 Destination 2030 RTP Amendment No.1, Addendum EIR, January 15, 2009;
- 2007 Destination 2030 RTP Amendment No.1, January 15, 2009;
- 2007 Destination 2030 RTP Amendment No.2, Addendum EIR, September 17, 2009;
- 2007 Destination 2030 RTP Amendment No.2, September 17, 2009;
- 2011 RTP Draft SEIR, April 30, 2010;
- 2011 RTP Final SEIR, July 15, 2010;
- 2011 RTP, July 15, 2010;

- 2011 RTP Amendment No. 1
- 2011 RTP Amendment No. 2
- Kern COG Staff: Mr. Robert Ball, Planning Division Director, Ms. Marilyn Beardslee, Senior Planner, Joe Stramaglia, Senior Planner, and Vincent Liu, Regional Planner III, personal communication, Jan/Feb., 2011; and
- State of California, Office of Planning and Research, California Environmental Quality Act (CEQA) Guidelines, 2010.

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