FINAL Environmental Impact Report

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Kern COG 2007 Destination 2030 Regional Transportation Plan

May 2007

Final Program Environmental Impact Report
for the
Kern COG 2007
Destination 2030 Regional Transportation Plan

May 2007

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1.0 EXECUTIVE SUMMARY

1.1 INTRODUCTION

The California Environmental Quality Act (CEQA) requires that a Draft Environmental Impact Report (DEIR) 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 Draft EIR provides the opportunity for comments on the proposed project and the Draft EIR. Once comments are received following the 45-day review period, comments will be considered and responses will be incorporated in the Final EIR to address any changes or additions necessary to clarify and/or supplement the information contained in the document. This Draft EIR, therefore, represents the culmination of all environmentally related issues raised during review of the Notice of Preparation (reference Appendix A) and during development of the Kern COG Regional Transportation Plan.

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. The forty-five day Draft EIR review and comment period begins on March 5 or 6, 2007 and will end on April 19, 2007.

The Draft EIR is composed of the following documents:

- 2007 Regional Transportation Plan, Draft Environmental Impact Report, March 1, 2007; and
- 2007 Air Quality Conformity Finding.

1.3 PROJECT DESCRIPTION

The project, as defined by CEQA Statutes, Section 21065, is the preparation of the 2007 revision of the Destination 2030 Regional Transportation Plan (RTP). 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. The California Transportation Commission has prepared guidelines (most recently revised in October 2003) 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 (beginning with SAFETEA-LU) to update the Regional Transportation Plan every four (4) years. The last comprehensive EIR on the RTP was completed in June 2006, which addressed transportation improvement projects, programs, and funding reflected in the 2004 RTP together with additional funding from the proposed ½ Cent Sales Tax Measure (Measure I). The proposed Measure did not receive the 2/3^{rds} voter approval it required in order to pass in the November 2006 election. The 2007 revision to the Destination 2030 RTP must be prepared to address possible environmental impacts resulting from its implementation sources of funding that are available for programming.

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 Destination 2030 RTP consists of required elements and is organized into various chapters. A description of each Chapter for the RTP follows.

- Chapter 1. Executive Summary;
- Chapter 2. Transportation Planning Policies;
- Chapter 3. Planning Assumptions;
- Chapter 4. Strategic Planning Investments;
- Chapter 5. Financing Transportation;
- Chapter 6. Environmental Justice;
- Chapter 7. Future Links;
- Chapter 8. Monitoring Progress;
- Chapter 9. References; and
- Appendices.

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;
- 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.

The environmental impact analysis and mitigation measure evaluation is organized in Section 4 of this Draft EIR 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 5 of this EIR, projects contained in the Destination 2030 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

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.

- 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

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.

- 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

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 proposed 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.

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

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.

- 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 (beyond that identified in the Destination 2030 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 2030 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.

- 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.

- 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} 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 the more than 55 percent increase in population projected by the Year 2030. 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

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 Destination 2030 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 2030. As a result, long-term emission impacts cannot be reduced to a less-than-significant level.

Biotic Resources

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.

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.

- 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 Destination 2030 RTP, impacts to these resources would remain a potentially significant impact at a regional level.

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.

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 and sensitive species during the individual improvement project design phase.

- Focused sensitive plant and wildlife species 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 surveys will be conducted during the appropriate flowering season for sensitive plant species with the potential to occur within the individual improvement project area.

- If sensitive plant or wildlife species 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, silt fencing, exclusion fencing and/or appropriate compensation where impacts cannot be fully avoided.

- Locations of sensitive species and sensitive 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 or wildlife species 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 abandon the nest.

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

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

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

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.

Cultural Resources

Impacts

Cultural resources may be encountered during development of projects proposed in the Destination 2030 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 Program EIR. 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 Program EIR.

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 combined projects in the Destination 2030 RTP, cumulative impacts to cultural resources would remain a potentially significant impact at a regional level.

Geology/Soils

Impact 3.6.1

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 3.6.2

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.

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 3.6.2

Some improvement projects require significant earthwork, increasing potential slope failure and long-term erosion. Earthwork can also alter unique geologic features. Individual improvement 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 improvement 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.

New roadways can also permanently alter unique geologic features, particularly in canyons, coastlines, and mountain passes. However, most of the improvement projects would occur in urbanized portions of the region or in existing transportation corridors. Nonetheless, new lanes may require earthwork that would affect existing natural geologic features.

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 3.6.3

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: 3.6.4

Because of Kern County's moderately high level of seismic activity (reference Figures 3-7 and 3-8 in Section 3 of this EIR), 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

- Individual improvement project structures will be constructed by responsible agencies to the seismic standards contained in the most recent edition of the Uniform Building Code (UBC).

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: 3.6.5

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: 3.6.6

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.

Hazards & Hazardous Materials

Impact 3.7.1

Construction and maintenance activities associated with the implementation of the projects and programs contained in the RTP could potentially result in solvent and architectural coating activities that may be considered hazardous if not used, stored, or disposed of properly. Any excesses in these materials, which exist upon completion of transportation projects in the RTP could be considered hazardous materials or wastes that may need to be disposed of properly. This is a potential impact. However, these left over materials can likely be stored properly and used for other transportation projects or purposes. Such use or reuse would reduce the amount of excess materials that would require disposal. In addition, steps can be taken to minimize the risk associated with handling hazardous materials in the process of transportation facility construction. Therefore, the potential impact is considered less-than-significant and no mitigation is required.

Mitigation Measures

Not applicable.

Significance After Mitigation

Less than significant.

Impact 3.7.2

Implementation of the projects and programs contained in the RTP could potentially result in decreased safety risks as a result of enhanced hazardous materials transport options.

The proposed Project could result in one of two outcomes where the transport of hazardous material is concerned:

- It is likely that potential routes for the transport of hazardous materials will become safer due to proposed improvements in the RTP. Hazardous materials are generally transported along the regional roadway network. Exceptions include gasoline and other fuels, which are often transported to their destinations along on local streets and roads. The RTP includes congestion reduction measures to improve transportation facilities in a number of corridors throughout the County. This is considered a potential beneficial effect, because these facilities could become safer due to reduced congestion levels resulting in fewer accidents; and/or

- Congestion is projected to decrease in 20 years as a result of the proposed Project improvements. The Plan indicates that congestion under the RTP is expected to decrease compared to the No Project and No Build Alternatives. This is considered a potential beneficial effect, because the decrease in congestion could contribute to reductions in accident rates, including those corridors where no transportation improvement projects are proposed.

Mitigation Measures

Beneficial impact. No mitigation needed.

Significance After Mitigation

Less than significant.

Hazardous wastes may be liquid, solid or sludge. The waste is considered hazardous if it has any of these four characteristics, ignitable, reactive, corrosive, and/or toxic. The wastes may be the by-products of manufacturing processes or simply unwanted commercial products. Hazardous waste generators in Kern County include industries, businesses, public and private institutions, and households. Because the valley portion of the County is largely agricultural, the use and storage of pesticides is prominent as well.

County Department of Health Services (DHS) classifies waste into three categories: "large quantity", or those who produce 1,000 kilograms or more per month; "small quantity", or those producing between 100 and 1,000 kilograms per month, including businesses, farms and households; and "household wastes", which includes solvents, pesticides, and miscellaneous wastes, such as car batteries, tires, cleaners, fertilizer and paints. According to the EPA, there are over 300 large quantity generators, and approximately 400 small quantity generators in Kern County.

Hazardous wastes are transported through Kern County by truck and rail. The Department of Transportation has established nine hazardous materials classifications, all of which may be through-transported on Interstate 5. In addition, the County has identified hazardous waste transportation routes, which are subject to certain restrictions. Therefore, transportation of thousands of tons of hazardous waste is made via state highways and County roadways, causing potential danger of spills caused by accidents.

Hydrology/Water Quality

Impact: 3.8.1

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: 3.8.2

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: 3.8.3

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: 3.8.4

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.

Land Use/Planning

Impact 3.9.1

Strategies aimed at addressing the transportation needs of future growth patterns were considered during development of the RTP. 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 2030 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 3.9.2

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 3.9.3

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 3.9.4

Implementation of the projects and programs contained in the Destination 2030 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 3.9.5

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.

Noise

Impact 3.10.1

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.

Population/Housing

Impact 3.11.1

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, 2006 and 2030, residential population is expected to increase by 55 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 2030 of 1.21 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 3.11.2

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.

Public Utilities, Other Utilities & Services Systems

Impact 3.12.1

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 23 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 3.12.2

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 3.12.3

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 3.12.4

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.

Transportation/Traffic

Impact 3.13.1

Kern COG was responsible for preparing existing and future LOS analysis using its Regional Traffic Model. Results of the 2030 LOS segment analysis with the Project along the RTP Regionally Significant Roads System are reflected in Figures 3-17 and 3-18 in Section 3 of this EIR. 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 in Section 3 of this EIR 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 2010, would be in place. When the improvements associated with the Project (combined with the projects contained in the 2030 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 2004 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 2030 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 Destination 2030 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 2030 RTP would be expected to reduce congestion levels and improve LOS, however even with this mitigation, the 2030 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 3.13.2

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 Measures

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

Significance After Mitigation

Less than significant.

Impact 3.13.3

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.

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 Draft Environmental Impact Report (EIR) 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 2007 Destination 2030 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.

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 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 an average altitude of 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 2006, Kern County's estimated population is approximately 779,900 (reference Table 2-1).

2.3 PROJECT CHARACTERISTICS

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 are 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, providing 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 EIR, as required by California Environmental Quality Act (15126(d), 15125.6(a)). From the Draft EIR, 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 Growth Trends

Kern County Population and Households (Occupied Housing)								1980-2006 Historic Growth Average Annual		2006-2030 Forecast Growth Average Annual	
Year	1980	1990	2000	2006	2010	2020	2030	Rate	Increase	Rate	Increase
Kern County											
Population	403,089	543,477	661,653	779,869	845,600	1,010,800	1,208,200	2.5%	14,492	1.9%	17,847
Households	139,881	181,480	208,655	237,524	260,700	316,700	381,700	2.0%	3,756	2.0%	6,007
Metro Bakersfield											
Population	228,000	329,100	409,800	497,000	534,700	641,200	775,100	3.0%	10,346	1.8%	11,588
Households	89,500	120,000	134,100	158,500	172,200	209,900	255,800	2.2%	2,654	2.0%	4,054
Arvin											
Population	6,863	9,286	12,956	15,027	17,200	24,100	33,700	3.0%	314	3.4%	778
Households	1,946	2,385	3,010	3,379	3,900	5,600	8,000	2.1%	55	3.7%	193
Bakersfield											
Population	105,611	174,820	246,899	311,824	342,700	433,800	549,100	4.1%	7,931	2.4%	9,887
Households	39,602	62,516	83,445	102,335	113,300	146,100	188,400	3.6%	2,413	2.6%	3,586
California City											
Population	2,743	5,955	8,385	12,048	13,600	18,400	24,900	5.5%	358	3.1%	536
Households	990	2,119	3,067	3,349	3,800	5,200	7,100	4.6%	91	3.2%	156
Delano											
Population	16,491	22,762	39,499	49,359	54,000	67,500	84,300	4.1%	1,264	2.2%	1,456
Households	4,912	6,236	8,411	9,669	10,600	13,500	17,100	2.6%	183	2.4%	310
Maricopa											
Population	946	1,193	1,111	1,137	1,230	1,490	1,800	0.7%	7	1.9%	28
Households	338	416	404	403	430	500	580	0.7%	3	1.5%	7
McFarland											
Population	5,151	7,005	9,835	12,538	13,700	17,100	21,400	3.4%	284	2.2%	369
Households	1,399	1,685	1,989	2,527	2,800	3,800	5,100	2.2%	43	3.0%	107
Ridgecrest											
Population	15,929	28,295	24,927	26,515	27,900	31,800	36,200	1.9%	407	1.3%	404
Households	5,762	10,349	9,826	10,089	10,700	12,500	14,600	2.1%	166	1.6%	188
Shafter											
Population	7,010	8,409	12,731	14,501	16,700	23,900	34,200	2.8%	288	3.6%	821
Households	2,284	2,558	3,292	3,641	4,300	6,500	9,800	1.8%	52	4.2%	257
Taft											
Population	5,316	5,902	8,811	9,147	9,800	11,700	14,000	2.1%	147	1.8%	202
Households	2,096	2,209	2,233	2,276	2,400	2,800	3,300	0.3%	7	1.5%	43
Tehachapi											
Population	4,126	5,791	11,125	12,610	13,900	17,800	22,800	4.2%	326	2.5%	425
Households	1,534	2,335	2,533	2,848	3,200	4,200	5,600	2.4%	51	2.8%	115
Wasco											
Population	9,613	12,412	21,263	24,288	26,800	34,200	43,600	3.5%	564	2.5%	805
Households	3,001	3,471	3,971	4,566	5,200	7,100	9,700	1.6%	60	3.1%	214
Unincorporated											
Population	223,290	261,647	264,111	290,875	308,070	329,010	342,200	1.0%	2,599	0.7%	2,139
Households	75,947	85,201	86,474	92,442	100,070	108,900	112,420	0.8%	634	0.8%	832

Source: 1980-2000 data from U.S. Bureau of the Census, 2006 estimate from California State Department of Finance, 2010-2030 based on Kern Council of Governments, April 2005 Adopted Regional Growth Forecast by Regional Statistical Area (RSA), City trends subject to periodic annexation and de-annexation activity.

The Destination 2030 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 4of the 2007 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 Destination 2030 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.

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 Destination 2030 Plan include I-5 and US Highway 395.

TABLE 2-2
Constrained List of Projects

2007 through 2010 - Major Highway Improvements (Cost X 1,000)			
Project	Locale	Scope	Cost
Environmental Review, Design and Rights-of-way Only - included in 2006 FTIP			
Route 14	Inyokern	Redrock / Inyokern Rd to Rt 178 - widen to four lanes (EIR)	In Progress
Route 46	Wasco	Jumper Ave to Rt 43 - widen to four lanes (EIR)	In Progress
Route 58	Metro Bkfd	Rosedale Hwy - SR 43 to SR 99 - widen to four/six lanes	$11,250
Route 119	Taft	Cherry Ave to Tupman Rd - widen to four lanes (EIR)	In Progress
Route 178	Bakersfield	Morning Drive - new interchange widen to four lanes	$4,500
Route 178	Bakersfield	Vineland Rd to Rancheria Rd - new four/six-lane freeway	$28,500
Route 178	Bakersfield	Mesa Marin to Rancheria Rd - widen to four/six lanes	$4,500
Route 184	Lamont	Rt 223 to Panama Ln - widen to four lanes (EIR)	In Progress
Route 395	Ridgecrest	China Lake Blvd To Rt 178 - widen to four lanes (EIR)	In Progress
W Ridgecrest Blvd	Ridgecrest	Mahan St to China Lake Blvd - widen to four lanes (EIR)	In Progress
Centennial Corridor	Bakersfield	(South) Oak St to Rt 178 - new six/eight lane freeway	$90,000
Oak St Interchange	Bakersfield	Rt 178 (24th St) and Oak St - construct interchange	$6,750
Hageman Extension	Bakersfield	Knudsen Dr to Rt 204 - construct four lane extension	$3,000
24th Street	Bakersfield	Rt 178 Elm St to D St - widen to four/six lanes	$3,750
Environmental Review, Design and Rights-of-Way Only			
Route 14	Inyokern	Redrock / Inyokern Rd to Rt 178 - widen to four lanes	$14,000
Route 46	Wasco	Jumper Ave (North) to Rt 43 - widen to four lanes	$7,000
Route 119	Taft	Cherry Ave to Tupman Rd - widen to four lanes	$14,000
Route 178/204	Metro Bkfd	SR 99 to Centennial Corridor- new four/six lane freeway	$26,250
Route 184	Lamont	Rt 223 to Panama Ln - widen to four lanes	$7,000
Route 395	Ridgecrest	China Lake Blvd to Rt 178 - widen to four lanes	$10,000
Cecil Ave	Delano	Albany St to Browning Rd - widen to four lanes (EIR Only)	$500
West Beltway	Metro Bkfd	SR 119 to 7th Std Rd - construct new four/six-lane freeway	$30,000
South Beltway	Metro Bkfd	I-5 to SR 58 - new six/eight-lane freeway - (Route Adoption & Env.)	$15,000
W Ridgecrest Blvd	Ridgecrest	Mahan St to China Lake Blvd - widen to four lanes	$4,000
Construction Phase - Included in 2006 FTIP			
I-5	Kern	Interchange improvements at Laval Rd	$7,000
Route 14	Mojave	Rt 58 to Cal City Blvd - widen to four lanes / interchange	$45,284
Route 46	Wasco	SLO County Line to I-5 - widen to four lanes (Phases 1 & 2)	$115,000
Route 178	Bakersfield	Fairfax Road - construct interchange and widen to four lanes	$15,000
Westside Parkway	Metro Bkfd	SR 99 / Oak St to Heath Rd - construct local freeway	$175,000
7th Standard Rd	Shafter	Santa Fe Way to Coffee Rd - widen to four/six lanes	$18,000
7th Standard Rd	Metro Bkfd	Coffee Rd to Rt 99 - construct interchange; four/six lanes	$13,000
7th Standard Rd	Metro Bkfd	Rt 99 to Wings Way - widen to four/six lanes	$2,500

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

Construction Phase			
Route 14	Inyokern	Redrock / Inyokern Rd to Rt 178 - widen to four lanes (Phase 1)	$35,000
Route 46	Wasco	SLO County Line to I-5 - widen to four lanes (Phase 3)	$68,000
Route 58	Tehachapi	Dennison Rd - construct interchange and bridge	$10,000
Route 58	Metro Bkfd	Rosedale Hwy - Rt 43 to SR 99 - widen to four/six lanes	$34,000
Route 99	Metro Bkfd	Snow Road - construct new interchange	$40,000
Route 99	Metro Bkfd	Hosking Road - reconstruct interchange	$40,000
Route 178	Bakersfield	Morning Drive - new interchange widen to four lanes	$13,544
Route 178	Bakersfield	Vineland Road to Rancheria Rd - new four/six lane freeway	$85,846
Route 178	Bakersfield	Mesa Marin to Rancheria Rd - widen to four lanes	$13,544
7th Standard Rd	Shafter	SR 43 to Santa Fe Way - widen to four lanes	$19,654
Centennial Corridor	Metro Bkfd	SR 99 to SR 178 - construct six/eight lane local freeway	$218,750
Allan Road	Metro Bkfd	Brimhall Rd to Stockdale Hwy - widen to six lanes	$7,000
Oak St Interchange	Bakersfield	Rt 178 (24th St) and Oak St - construct interchange	$22,591
Hageman Extension	Bakersfield	Knudsen Dr to Rt 204 - construct four lane extension	$8,300
24th Street	Bakersfield	Rt 178 Elm St to D St - widen to four/six lanes	$11,295
		Sub-total	$1,298,308
2011 through 2015 - Major Highway Improvements (Cost X 1,000)			
Project	Locale	Scope	Cost
Construction Phase			
Route 14	Inyokern	Redrock / Inyokern Rd to Rt 178 - widen to four lanes (Phase 2)	$35,000
Route 99	Metro Bkfd	Olive Drive - reconstruct interchange (All phases)	$50,000
Route 119	Taft	Cherry Ave to Tupman Rd - widen to four lanes	$60,000
W Ridgecrest Blvd	Ridgecrest	Mahan St to China Lake Blvd - widen to four lanes	$10,000
West Beltway	Metro Bkfd	SR 119 to 7th Std Rd - new four/six-lane freeway (12.5 miles)	$189,000
Environmental Review, Design and Rights-of-Way Only			
Interstate 5	Kern	From Fort Tejon to Rt 99 - widen to ten lanes	$33,500
Cal City Blvd	Cal City	Rt 14 east six miles - widen to four lanes	$1,000
Cecil Ave	Delano	Albany St to Browning Rd - widen to four lanes	$4,000
South Beltway	Metro Bkfd	I-5 to SR 58 - construct new six/eight-lane fwy (28 miles) (Design / RW)	$62,000
		Sub-total	$444,500
2021 through 2025 - Major Highway Improvements (Cost X 1,000)			
Project	Locale	Scope	Cost
Construction Phase			
Route 46	Wasco	Rt 43 to Rt 99 - widen to four lanes (Phase 1)	$25,000
Route 46	Wasco	Jumper Ave (North) to Rt 43 - widen to four lanes	$25,000
West Beltway-South	Metro Bkfd	S. Beltway to I-5 - extend freeway	$80,000
South Beltway	Metro Bkfd	I-5 to SR 58 - construct new six/eight-lane freeway (Phase 2)	$160,000
Environmental Review, Design and Rights-of-way Only			
West Beltway-North	Regional	N. Beltway to SR 99 -extend freeway	$7,500
West Beltway-South	Metro Bkfd	S. Beltway to I-5 - extend freeway	$7,500
East Beltway	Metro Bkfd	South Beltway to SR 178 - new expressway	$20,000
		Sub-total	$325,000

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

2026 through 2030 - Major Highway Improvements (Cost X 1,000)			
Project	Locale	Scope	Cost
Construction Phase			
Route 46	Wasco	Rt 43 to Rt 99 - reconstruct interchange (Phase 2)	$45,000
Route 58	Bakersfield	Rt 99 to Cottonwood Rd. - widen to six lanes	$30,000
Route 99	Metro Bkfd	Ming Ave to Bear Mountain Blvd - widen to eight lanes	$50,000
Route 178	Metro Bkfd	Centennial Corridor to Oswell St - widen to eight lanes	$29,000
Route 184	Lamont	Rt 223 to Panama Ln - widen to four lanes	$48,000
Route 395	Ridgecrest	China Lake Blvd To Rt 178 - widen to four lanes	$57,000
Cal City Blvd	Cal City	Rt 14 east six miles - widen to four lanes	$10,000
South Beltway	Metro Bkfd	I-5 to SR 58 - construct new six/eight-lane freeway (Phase 3)	$140,000
Environmental Review, Design and Rights-of-way Only			
Route 46	Wasco	SLO County Line to I-5 - interchange upgrade at I-5 (Phase 4)	$35,000
Route 178	Kern	Near Rancheria Rd to China Garden -new freeway EIR/EIS	$10,000
Route 223	Arvin	Rt 184 to Rt 99 - widen to four lanes	$1,000
		Sub-total	$455,000

2007 through 2030 - Local Streets and Roads			
Project	Locale	Scope	Cost
Various Locations	Metro Bkfd	Bridge and street widening; reconstruction	$338,000
Various Locations	Metro Bkfd	Signalization	$2,000
Various Locations	Rosamond	Street widening; signalization	$14,000
Various Locations	Countywide	Traffic Control Measures	$86,000
Various Locations	Countywide	Bridge and street widening; reconstruction; signalization	$460,000
		Sub-total	$900,000

2007 through 2030 - Transit			
Project	Locale	Scope	Cost
	Metro Bkd	Full size natural gas buses - 120 replacement buses	$45,000
	Metro Bkd	Full size natural gas buses - 120 new buses	$45,000
	Various	Midsize natural gas buses - 120 replacement buses	$6,000
	Various	Midsize natural gas buses - 120 new buses	$6,000
	Various	Mini van / buses - 45 replacement buses	$1,800
	Metro Bkfd	2 transfer stations	$3,000
	Metro Bkfd	ITS Related Improvements / Upgrades	$3,000
	Various	Park and Ride Lots (750 spaces)	$3,000
		Sub-total	$112,800

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

2007 through 2030 - Non-motorized			
Project	Locale	Scope	Cost
Various locations	Metro Bkfd	Construct Class I or Class IIII Bike Path; striping; signage	$5,000,000
Various locations	County	Construct Class I or Class IIII Bike Path; striping; signage	$1,800,000
Various locations	Cal City	Construct Class I or Class IIII Bike Path; striping; signage	$1,700,000
Various locations	Delano	Construct Class I or Class IIII Bike Path; striping; signage	$500,000
Various locations	Ridgecrest	Construct Class I or Class IIII Bike Path; striping; signage	$1,600,000
Various locations	Taft	Construct Class I or Class IIII Bike Path; striping; signage	$400,000
		Sub-total	$11,000,000

2007 through 2030 - Passenger Rail			
Project	Locale	Scope	Cost
		Unknown	$0
		Sub-total	$0

Summary of Constrained Projects (X 1,000)	
Program Category	Totals
Major Highway Improvements 2007-2010	$1,298,308
Major Highway Improvements 2011-2030	$1,624,500
Local Streets and Roads	$900,000
Transit	$112,800
Non-motorized	$11,000
Passenger Rail	$0
Grand Total	$3,946,608

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), 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.

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 and to be updated in 2007. 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.

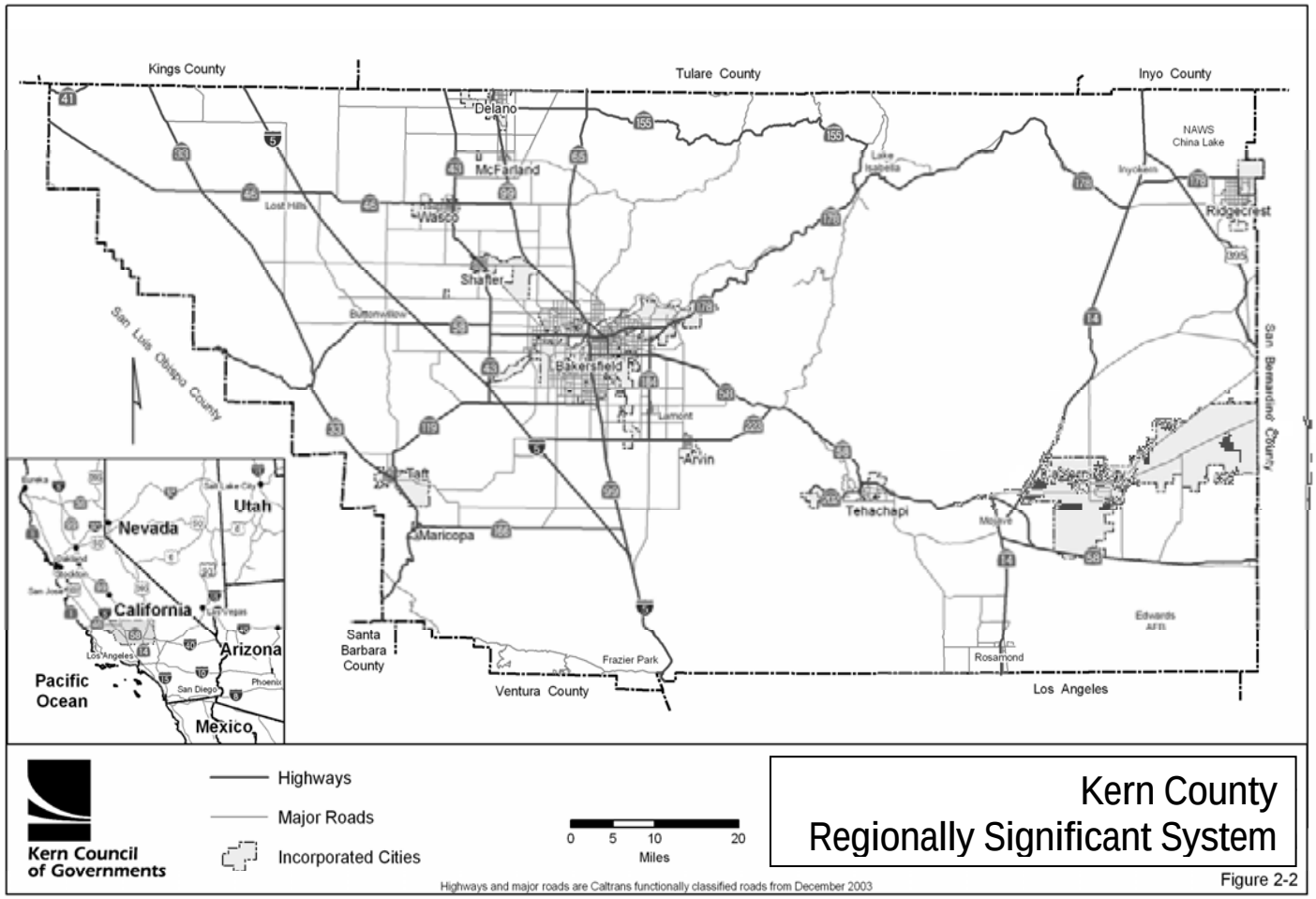

Kings County
Tulare County
Inyo County
Delano
McFarland
Wasco
Shafter
Buttonwillow
Bakersfield
Lamont
Arvin
Taft
Maricopa
Tehachapi
Lake Isabella
NAWS China Lake
Ridgecrest
Rosamond
Edwards AFB
Mojave
San Luis Obispo County
San Bernardino County
Santa Barbara County
Ventura County
Frazier Park
Los Angeles
Nevada
Utah
California
Arizona
Pacific Ocean
Mexico
Highways
Major Roads
Incorporated Cities
0 5 10 20
Miles
Kern Council of Governments
Kern County
Regionally Significant System
Highways and major roads are Caltrans functionally classified roads from December 2003

Figure 2-2

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.

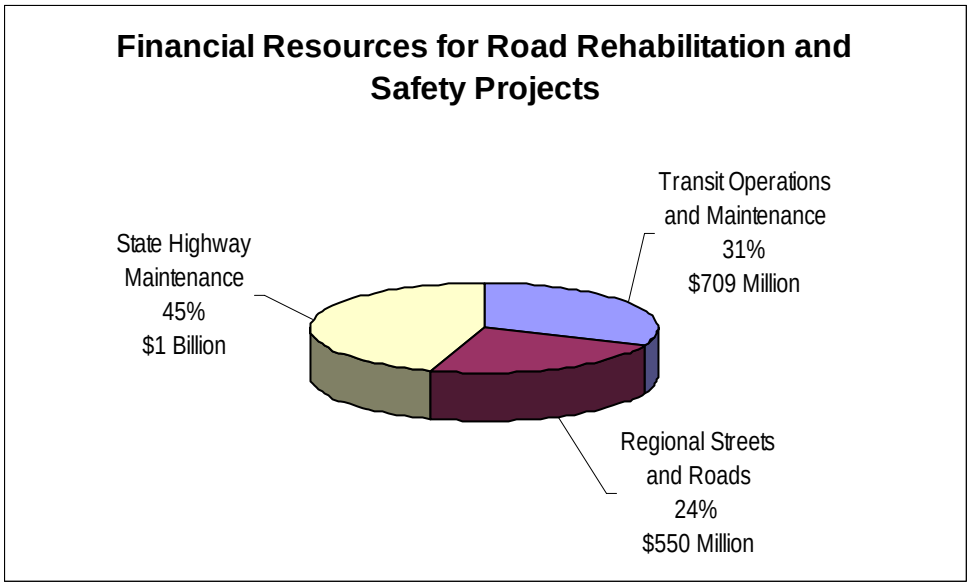
Maintenance of state highways also requires considerable investment. State highway maintenance and safety project expenditures are generally funded as part of the State Highway Operation and Protection Program (SHOPP), which do not require local matching dollars. Caltrans prepares a 10-year SHOPP for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

TABLE 2-3
Revenue Forecast 2006-2030

Funding Source	Regional Total $	Percent of Total
Local Sources		
Local Transportation Funds	$460,000,000	7
Bus Farebox	$171,000,000	3
Local Agency Funds/Developer Fees/Regional Fees/Other	$1,274,000,000	20
Subtotal	$1,905,000,000	30
State Sources		
STIP (Regional and Interregional)	$1,797,000,000	28
State Transit Assistance (STA)	$460,500,000	7
State Highway Operation and Protection Program (SHOPP)	$1,000,000,000	16
State Aid to Airports	$3,000,000	<1
Subtotal	$3,260,500,000	52
Federal Sources		
Surface Transportation Program	135,000,000	2
Transportation Enhancement Activities Program	10,400,000	<1
Congestion Mitigation and Air Quality Program	106,000,000	2
Local Assistance (HES, HBRR, Section 130, Emergency Relief)	82,000,000	1
Federal Aid to Airports	45,000,000	1
FTA Section 5307 (Transit – metro)	38,800,000	1
FTA Section 5310 (Transit – senior / disabled)	2,100,000	<1
FTA Section 5311 (Transit – rural)	5,400,000	<1
State/Federal Demonstration	720,000,000	11
Subtotal	1,144,700,000	18
Total	$5,603,200,000	100%

FIGURE 2-3
Overview of Financial Resources



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. Two 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. The metropolitan Bakersfield TIF assesses $6,460 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 that is 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.

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. 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 Destination 2030 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.

Proposed Actions

Near Term, 2007-2010 (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.
- Update and revise Congestion Management Program.
- Maintain Regional Traffic Models to aid in traffic and air quality analyses.
- Prepare a systems-level planning analysis of various transportation system alternatives using multimodal performance measures.
- Pursue ground access improvements for Meadows Field.
- Pursue a permanent regional funding source via a regional traffic mitigation fee, and/or transportation impact fees by individual communities.
- Implement the capital improvements for highways, regional roads, and interchanges for this time period.
- Place sales tax ballot measure on the November 2007 or the 2008 ballot.

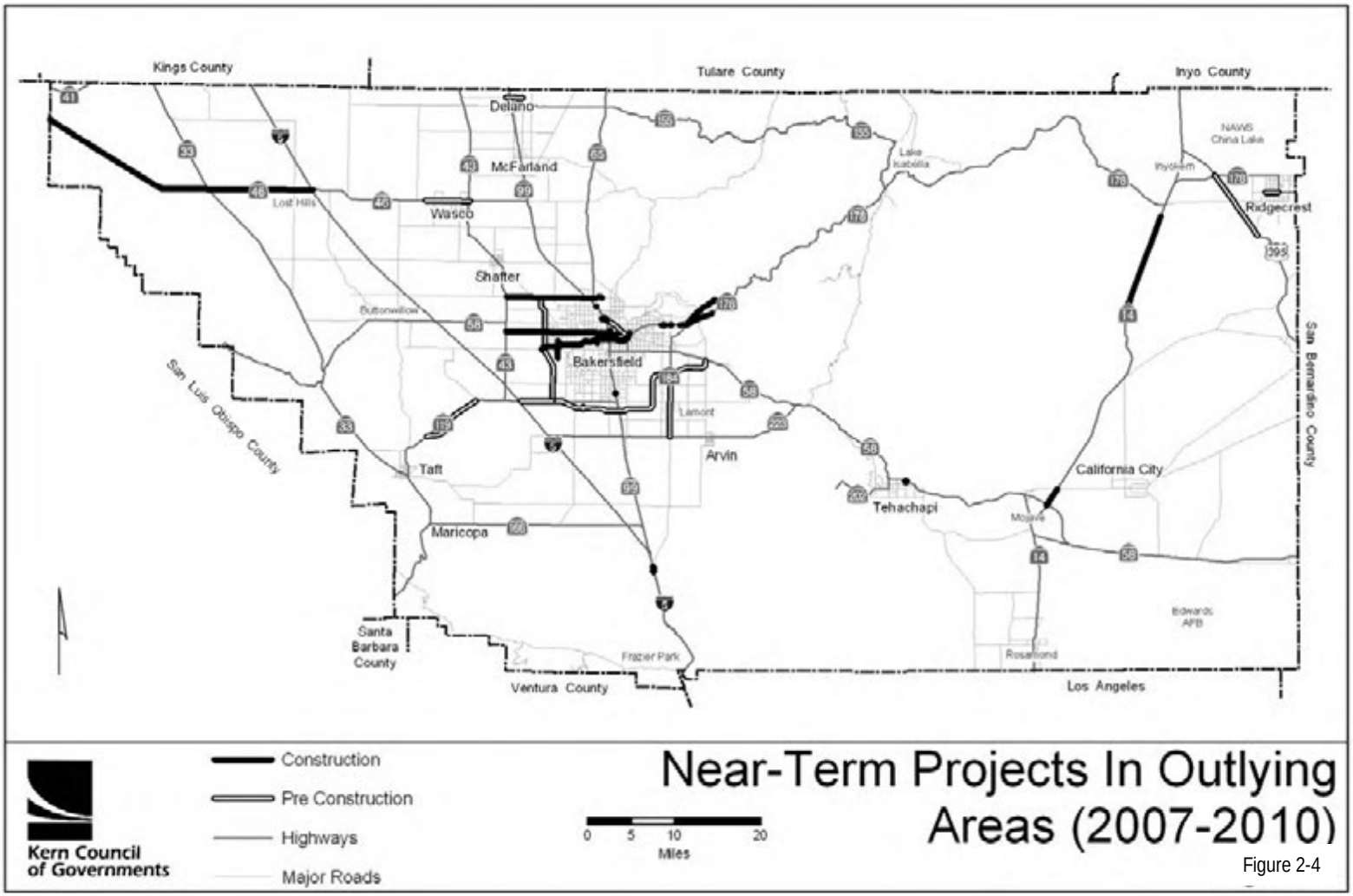
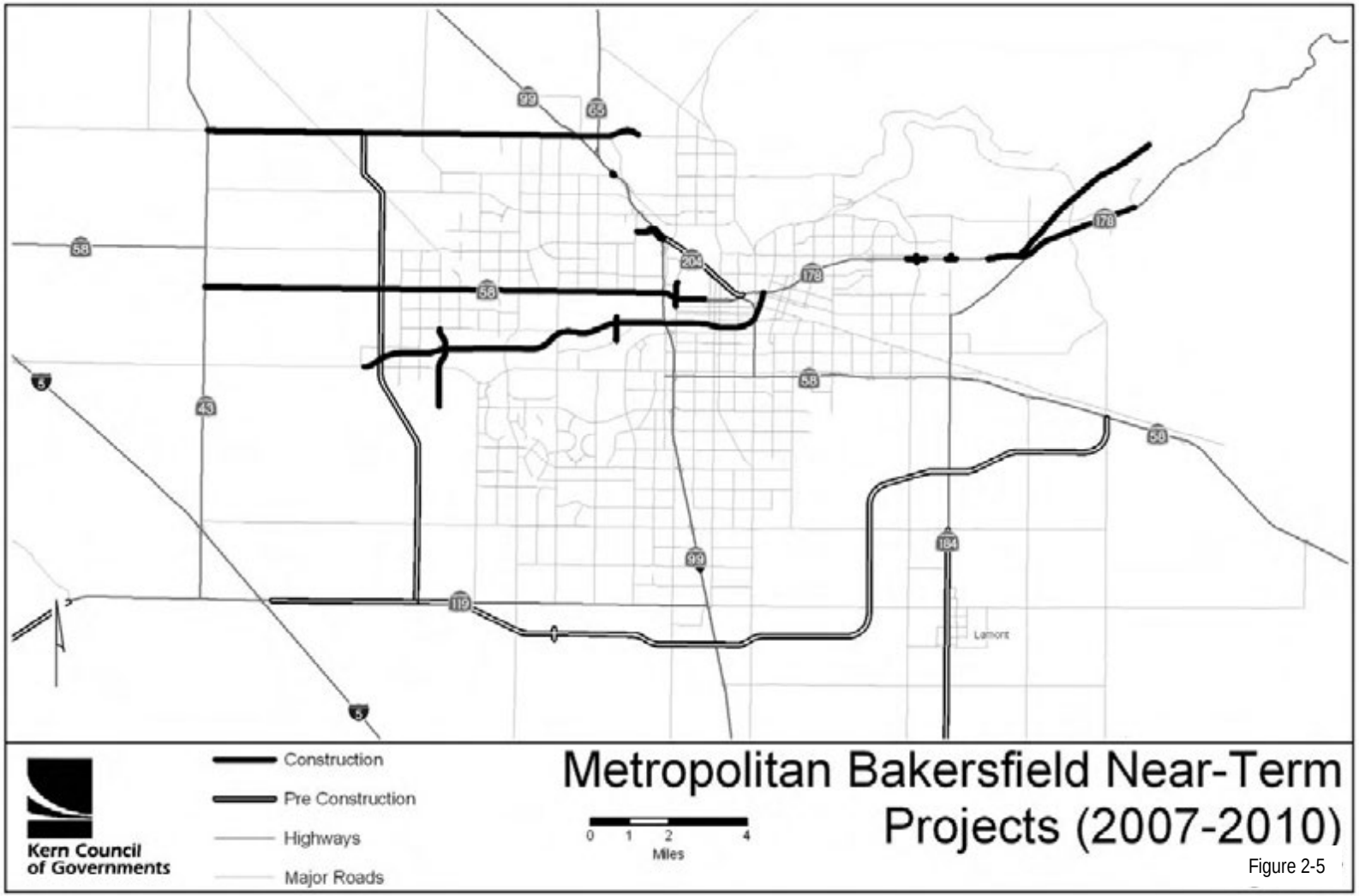

Kings County
Tulare County
Inyo County
Delano
McFarland
Wasco
Shafter
Bakersfield
Buttonwillow
Lost Hills
Lake Isabella
Inyokern
NAWS China Lake
Ridgecrest
San Luis Obispo County
Taft
Arvin
Lamont
Tehachapi
California City
Mojave
Maricopa
Edwards AFB
Rosamond
Santa Barbara County
Frazier Park
Ventura County
Los Angeles
San Bernardino County
Kern Council of Governments
Construction
Pre Construction
Highways
Major Roads
0 5 10 20
Miles
Near-Term Projects In Outlying Areas (2007-2010)

Figure 2-4


99
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Lamont
Kern Council of Governments
Construction
Pre Construction
Highways
Major Roads
0 1 2 4
Miles
Metropolitan Bakersfield Near-Term Projects (2007-2010)

Figure 2-5

Long Term, 2011-2030 (reference Figures 2-6 and 2-7)

- Maintain existing roadway infrastructure.
- Implement as appropriate and feasible the recommendations of the completed 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.
- 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.

PUBLIC TRANSPORTATION ACTION ELEMENT

Transit Needs and Issues

Limited Transit Dollars

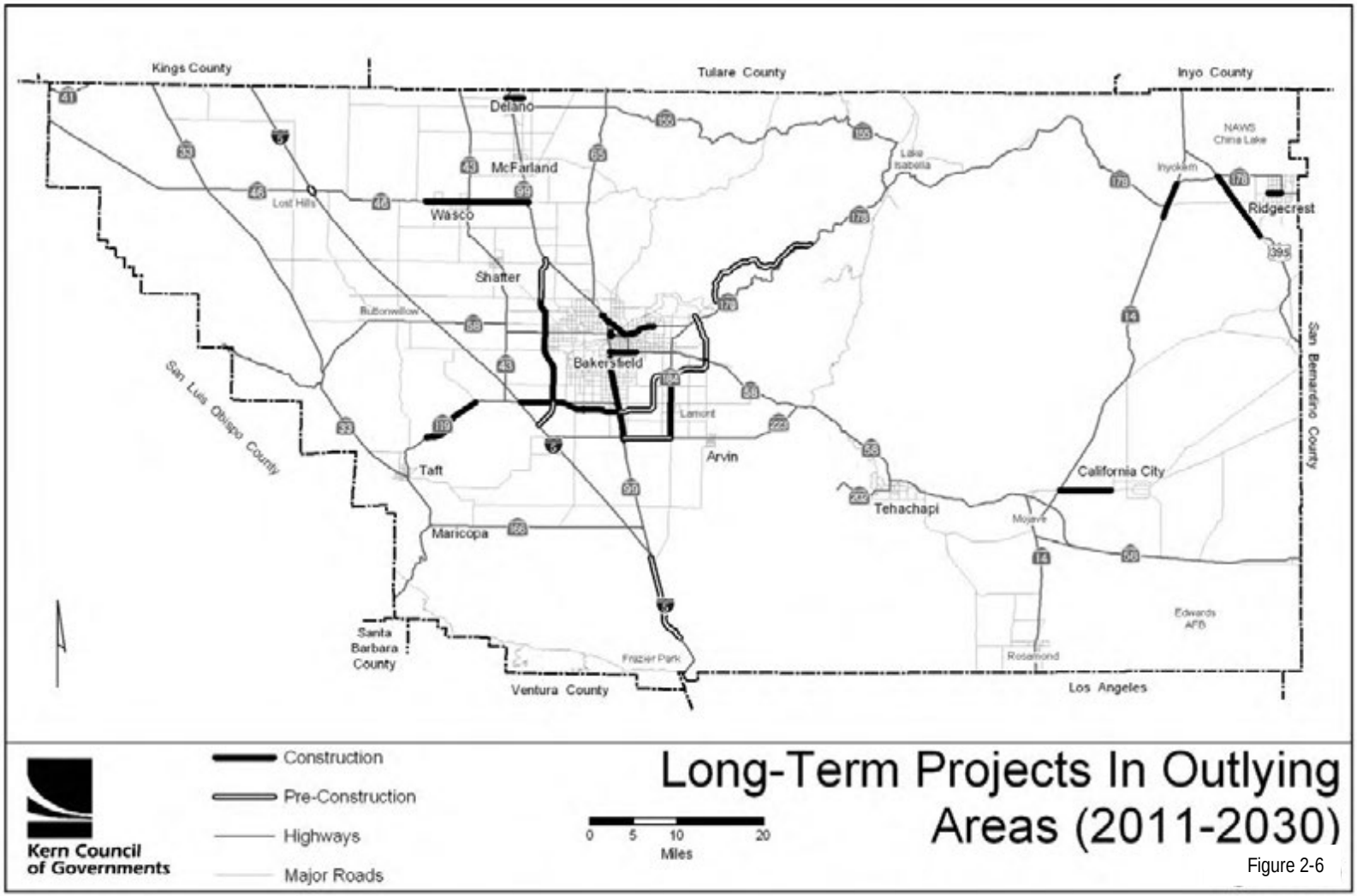
Financial resources for public transportation are limited while demand for those resources continues to increase. Traditional public transportation revenue sources do not support the increasing need for public mass transportation to help mitigate population increases, clean air mandates, and trip reduction programs. Should a countywide transportation sales tax measure be implemented, a portion of this revenue would provide capital and operating revenues for all public transit providers.

Kern County is the only major urbanized California county without a dedicated sales tax to support both highway and transit improvements. The expansion of public transportation services in the County is predicated on an aggressive financial plan. Chapter 7 - Future Links in the RTP provides a discussion of the benefits Kern County's infrastructure would have from a dedicated revenue source.

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.


Kings County
Tulare County
Inyo County
Delano
McFarland
Wasco
Shafter
Bakersfield
Lost Hills
Buttonwillow
Lamont
Arvin
Taft
Maricopa
Tehachapi
California City
Ridgecrest
Lake Isabella
Inyokern
NAWS China Lake
Mojave
Rosamond
Edwards AFB
Frazier Park
San Luis Obispo County
Santa Barbara County
Ventura County
Los Angeles
San Bernardino County
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Highways
Major Roads
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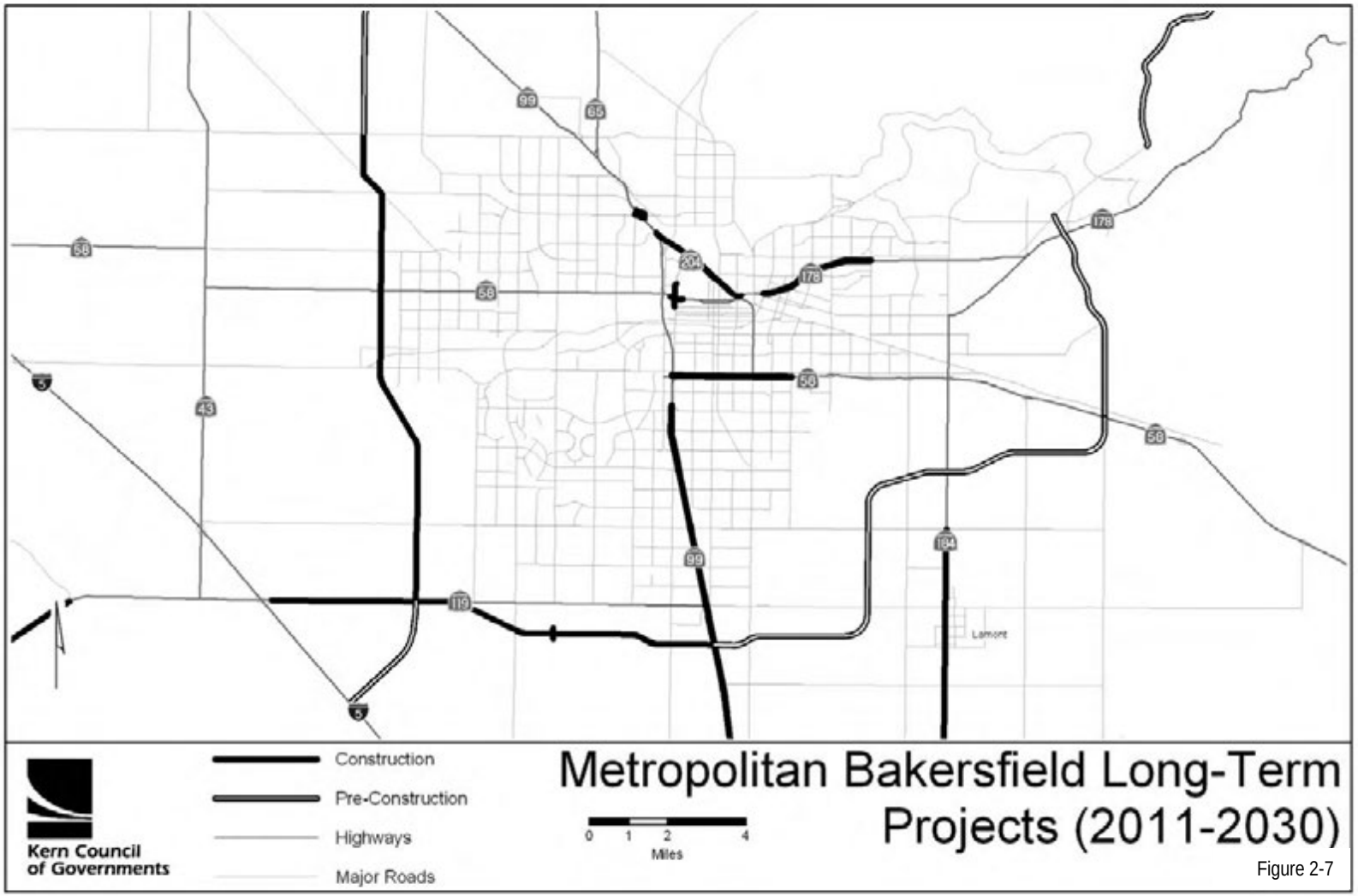
Kern Council of Governments
Long-Term Projects In Outlying Areas (2011-2030)

Figure 2-6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Kern Council of Governments
Construction
Pre-Construction
Highways
Major Roads
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Miles
Metropolitan Bakersfield Long-Term Projects (2011-2030)

Figure 2-7

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

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, 2007-2010

- 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, 2011-2030

- 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.

County of Kern Airports

Meadows Field

Meadows Field, 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 is an active general aviation airport with numerous Kern-based corporations using the facility for their operations. General aviation is served on approximately 35 acres both northwest and southwest of the terminal area. A full range of fixed-base services is available.

Air cargo operations for the Kern region are conducted primarily at Meadows Field, with a projected increase in activity from 964 tons in 1995 to an anticipated 1700 tons by 2030. Federal Express, DHL/Airborne, and UPS currently provide air cargo service from Meadows Field.

While the potential for air cargo growth has not been fully studied, initial assessment does not preclude the establishment of domestic or international air cargo services at Meadows Field. As Los Angeles region airports reach saturation, Meadow's should be considered a prime contender for increased air freight shipment. The *Draft Meadows Field Airport Master Plan 2005* addresses the need for a land use plan that would consider reserving adequate runway frontage to develop a dedicated air cargo facility. Additionally, Meadows Field's Airport Master Plan allows for the construction of a third runway (east of the existing runways) to meet any resulting air freight capacity expansion.

Elk Hills/Buttonwillow Airport

Elk Hills/Buttonwillow Airport serves seasonal agricultural aircraft and personal aviation needs of western Kern County. It is located near the intersection of Interstate 5 and Route 58, a highway-oriented commercial area. The airport has a 3,260 foot unlighted runway, paved aircraft tiedown space for twelve aircraft, and ten automobile parking spaces. Existing land use in the vicinity of the airport is agriculture.

Kern Valley Airport

Kern Valley Airport serves commercial, recreational, and occasional fire suppression activities in the Lake Isabella/Kern River Valley area, and is on lease from the U.S. Forest Service. The airport is located south and east of the community of Kernville, with other nearby communities including Wofford Heights, Lake Isabella, Bodfish, Mountain Mesa, Onyx, and Weldon. Outdoor recreation is the prime attraction in this region, and aviation activity continues to increase.

Kern County Department of Airports completed a *Draft Airport Master Plan* for Kern Valley Airport in 2005. Short-term (2006-2010) airport improvements recommended in the Master Plan include: constructing a 500-foot unpaved overrun for Runway 35; relocating the northern portion of the parallel taxiway; installing an Automated Weather Observation Station; and other service-related improvements. Long-term (2007-2025) improvements include: widening and extending the runway; widening the parallel taxiway; widening the connector taxiway; and land acquisition to accommodate these projects.

Lost Hills Airport

Lost Hills Airport serves local and regional agricultural, business, and personal aviation needs in northwestern Kern County, and is located near the intersection of I-5 and Route 46. This intersection is developing as a highway-oriented commercial area. Route 46 is the primary access to the central coast area from the southern San Joaquin Valley. The airport is an important base for agricultural aircraft operating over the area's extensive cropland.

Kern County Department of Airports completed a *Draft Airport Master Plan* for Lost Hills Airport in 2005. Short-term (2006-2010) airport improvements recommended in the Master Plan includes installation of an Automated Weather Observation System. Long-term (2011-2025) airport improvements include: installation of Precision Approach Path Indicators for both ends of the runway; provision for a Global Positioning System based instrument approach procedure; extension of the existing runway; and construction of a full-length parallel taxiway.

Poso Airport

Poso Airport, located approximately 20 miles north of Bakersfield, is used primarily for agricultural and training aircraft. Airport access is via Route 99 and Route 46 East. The airport is also used for recreational purposes in conjunction with drag racing events at an adjacent paved strip.

Taft Airport

Taft Airport serves business and personal aviation needs for the City of Taft and southwestern Kern County, an area of intensive oil production and processing. While significant demand has been voiced for an airport in this region, the existing facility has been considered unsatisfactory for some years. The runway heading is poorly oriented to wind direction; the runway gradient of 2.2 percent exceeds FAA standards, and insufficient land is available for improvements. Kern County is evaluating available options for improving the airport.

Wasco Airport

Wasco Airport serves agricultural, business, and personal needs for the area around the City of Wasco. The airport is located one mile north of Wasco and 22 miles northwest of Bakersfield.

Kern County Department of Airports completed a Draft Airport Master Plan for Wasco Airport in 2005. Short-term (2006-2010) airport improvements included: rehabilitation of the aircraft parking pavement; purchase of land or acquisition of avigation easements northeast of the airport to accommodate future runway/taxiway extension;

installation of an Automated Weather Observation System; and installation of Precision Approach Path Indicators for both ends of the runway. Long-term (2011-2025) airport improvements include: extension of the runway/taxiway to 3900 feet; installation of taxiway lights; installation of Runway End Identifier Lights; provision for a Global Positioning System-based instrument approach procedure; and other projects designed to improve service to airport users.

Municipal Airports

In addition to the airports operated by Kern County, four airports are owned and operated by municipalities located in three geographic subregions of the County: San Joaquin Valley, Southern Sierra/Tehachapi Mountains, and Mojave Desert. In the Valley, the Cities of Bakersfield and Delano operate municipal airports. The City of Tehachapi operates a municipal airport in the mountain area, and California City Municipal Airport is located west of that desert community.

Bakersfield Municipal Airport

Bakersfield Municipal Airport serves business, personal, and recreational aviation needs in the Bakersfield metropolitan area. Bakersfield Municipal is located in southeast Bakersfield, approximately 1.5 miles south of Route 58 and about two miles east of Route 99.

Existing land use in the vicinity of the airport consists of industrial to the west and north, low-density and rural residential to the northeast and east, and rural/ agricultural to the east and south. Planned land use for the area adjacent to the airport, as depicted in the Casa Loma Specific Plan, continues the current pattern, with some extensions of industrial activity in existing undeveloped areas.

California City Municipal Airport

California City Municipal Airport is used for various general aviation activities, especially recreational aviation. The airport is located northwest of California City approximately eight miles east of Route 14 and two miles north of California City Boulevard.

Delano Municipal Airport

Delano Municipal Airport serves business, personal and recreational aviation activity in the north-central part of the County. Extensive crop dusting and helicopter operations, as well as ultralight activities, are accommodated at this airport. The airport is located just east of Route 99 approximately two miles southeast of central Delano.

Tehachapi Municipal

Tehachapi Municipal is a general aviation airport providing business, personal and recreational aviation services. The airport is located between Route 58 and Tehachapi Boulevard. The airport is also adjacent to the Union Pacific Railroad, but a railroad spur into the airport is not currently available.

Airport Districts

Three airport districts operate in Kern County; each is organized as a special district, with a board of directors and an airport manager. Minter Field is located within the City of Shafter. East Kern and Indian Wells airport districts are in eastern Kern County.

Indian Wells Airport District/Inyokern Airport

Indian Wells Airport District/Inyokern Airport serves the China Lake Naval Air Weapons Station, the community of Inyokern, and the City of Ridgecrest with scheduled airline service to Los Angeles International. It also serves local general aviation needs for personal, business and recreational flying. Several fixed-base operators provide services at the airport. The airport is located northwest of the small community of Inyokern.

Skywest operates a fleet of turbo-prop aircraft, and began air carrier service from Inyokern to Los Angeles International February 1951. Skywest currently provides three daily flights to LAX. Given the proximity to Reno and Las Vegas, service to these cities may be considered at some future date.
Other activities at Inyokern include based and itinerant soaring activity, film production, and Sheriff's department search and rescue activities. The airport hosts annual air shows and drag races. The airport is in the process of acquiring fire-fighting equipment for aircraft crash protection.

East Kern Airport District/Mojave Airport

East Kern Airport District/Mojave Airport currently offers fixed-base operator facilities for airport users from Edwards Air Force Base, Rosamond, Mojave, Tehachapi, California City, and Boron. The airport serves as a civilian flight test center for business, military, civil, and home-built aircraft being development testing. It also serves as a base for modification of major military and civilian aircraft. The airport is located northeast of the community of Mojave and is within one mile of Routes 14 and 58. A rail spur from Union Pacific Railroad leads into the airport.

Existing land use in the vicinity consists of mixed urban use to the east and south in the community of Mojave, industrial and highway commercial uses to the northwest, and undeveloped desert to the north and east. The airport itself includes a substantial area devoted to aviation related industrial uses.

Minter Field Airport District/Shafter Airport

Minter Field Airport District/Shafter Airport serves general aviation activities at the junction of Route 99 and Lerdo Highway. Minter Field has two main runways and one crosswind runway. Runway 12/30 is 4,520-feet long, has both Very High Frequency Omni-directional Range non-precision and Global Positioning System-based instrument approaches and is equipped with a precision approach path indicator and landing lights.
A third runway is being reconstructed to serve as a general aviation crosswind landing alternative. One of the benefits of this runway would be to offer student pilots the opportunity to practice crosswind approaches and departures.

Minter Field is surrounded primarily by agricultural uses with a housing development and commercial area and campground to the south, and industrial uses to the south. The airport owns three miles of rail spur connected to the Union Pacific railroad and is served directly by Kern Regional Transit.

Military Aviation Facilities

China Lake Naval Air Weapons Station (NAWS) and Edwards Air Force Base (EAFB)

China Lake Naval Air Weapons Station (NAWS) and Edwards Air Force Base (EAFB) are located in an area referred to as "the R-2508 complex", which is used for the advancement of weapons systems technology and tactical training. The R-2508 complex consists of several restricted airspace areas; it is approximately 110 miles wide and 140 miles long, and covers approximately 20,0000 square miles in eastern Kern, San Bernardino, Los Angeles, Ventura, Tulare, and Inyo counties. However, the nature of operations conducted within this airspace creates a flight hazard to non-military aircraft.

In addition to NAWS and EAFB, other military installations use this air space, including Fort Irwin Military Reservation near Barstow and Air Force Plant 42 at Palmdale.

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 2006 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. A ballot initiative on high speed rail may go to the voters in November 2008.

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
- initiate 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 2007-2010

- 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, 2012-2030

- 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 these 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 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, 2007-2010

- 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, 2011-2030

- Widen Weedpatch 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 show 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 Destination 2030 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; and
- Lack of knowledge regarding the benefits of bicycling.

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 Destination 2030 Regional Transportation Plan 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 2000-2010

- 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 2011-2030

- 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 Destination 2030 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, will operate a 100-percent compressed natural gas (CNG) fixed route fleet (65 buses) by 2005. 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 vanpooling, telecommuting, ridesharing, walking and biking to work. In 2003, Kern COG began a public and employer educational campaign as a part of its commitment to implement all Reasonably Available Control Measures (RACM) for the San Joaquin Valley Ozone Attainment Demonstration Plan. The program features the slogan "Once a week makes a difference," and complements existing public education programs by the Air District. The program included billboards, radio advertisements and a break-room poster/information mailer to all employers with more than 20 employees to encourage biking, walking, telecommuting, transit use, and ridesharing 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 Destination 2030 RTP. 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 will be 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.
- 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.
- 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 Destination 2030 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 Destination 2030 RTP and 2004 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. However, it should be noted that Kern County's Project Clean Air removed over 1000 pre-1980 gross-polluting vehicles between 1991 and 1999. 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.

LAND USE ACTION ELEMENT

Land use is one of the most important elements of effective transportation planning. Policy for transportation projects depends on effective and efficient land use policies. While Kern COG does not have jurisdiction over land use planning, Kern COG does advise and encourage dialogue among those involved in the decision making process. As part of this land use action element Kern COG will continue to use the CEQA (California Environmental Quality Act) and NEPA (National Environmental Policy Act) processes to promote dialogue with its member agencies on land use, transportation and air quality issues, to ensure that land use projects are environmentally sound. Also, the San Joaquin Valley Unified Air Pollution Control District will ensure that air quality standards are upheld, bringing the Valley into acceptable emission attainment levels.

Major Transportation Investment Study

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 COG;
- 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 $5,200 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 a potential high-speed rail connection to Los Angeles and San Francisco would require future study should funding 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 used 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, 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.

Land Use Decisions Outside Kern County

Land use decisions in neighboring jurisdictions can greatly impact Kern's regional transportation system, as is being experienced at the northern end of San Joaquin Valley. Spillover development from the coastal areas will be a primary-source driver for development in the Kern region. However, the percent commuting to Los Angeles County from 1990 to 2000 remained unchanged at 3 percent of the total households in Kern, indicating that the main wave of urbanization has yet to reach this county. Kern COG and Southern California Association of Governments (SCAG) meet bi-annually to discuss inter-regional planning issues such as land use, transportation strategies, and regional housing needs. Recent meetings have been held to discuss the proposed Centennial new town development on Tejon Ranch property just south of the Kern County line near Interstate 5 and State Route 138. Kern COG is providing modeling information on the transportation impacts of this development to the Kern region. In addition, Kern COG has agreements in place with the eight San Joaquin Valley metropolitan planning organizations and the four-county Eastern Sierra planning partnership.

Regional Housing Allocation Plan

As required by the California Department of Housing and Community Development (HCD), Kern COG prepares a Regional Housing Allocation Plan (HCP) to provide for adequate low and very low income housing throughout all jurisdictions in the region. The distribution of low income housing is becoming more of an issue as pressures from the southern California housing market drive housing prices up in Kern. The increasing need for lower income housing may result in an increase in higher densities for new housing.

A New Vision

In response to the challenge of building and maintaining a transportation network that works, many professionals have proposed a variety of alternative land use designs to more effectively reduce urban sprawl, make more efficient use of transportation and infrastructure systems, and enhance the livability of Kern's communities. These visions have been given different names, such as new urbanism, transit-oriented development, traditional neighborhood development; whatever the name, they share the common goal of making communities more environmentally sound and accessible within today's financial, physical and environmental limits.

How to apply this vision differs amongst stakeholders. Elected officials and planners should tailor programs to the character and context of their individual communities. The goal should be to develop a comprehensive strategy that includes a range of mutually supportive actions.

One of the best statements of this new vision was developed by a number of designers, activists and local government officials as the "Ahwahnee Principles," which established a set of community, regional and implementation approaches for creating more livable communities. These principles call for leaders to:

- Plan for complete communities that integrate housing, jobs, shopping, recreation, and civic uses essential to the daily life of residents;
- Size and arrange communities so that jobs, housing and other uses are within walking distance of transit stops and of each other;
- Create a well-connected circulation system that provides direct and interesting paths for pedestrians and bicyclists and organize land uses so that they can be well-served by transit;
- Provide a community center and an ample supply of squares, greens and parks;
- Establish a well-defined edge for the community through permanent open space and incorporate existing natural areas into the community's design;
- Organize the regional network of urban places around a regional system of transit rather than freeways;
- Locate regional institutions and services within major urban centers; and
- Take charge of planning these communities to avoid piecemeal development and encourage infill and redevelopment.

Overall, these principles are designed to help communities become more livable and environmentally sustainable.

Near Term Actions 2007-2010

- 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;
- Track progress on the MTIS Land Use strategy in metropolitan Bakersfield in the MTIS annual report;
- 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 2011-2030

- 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 commuter 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.
- 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 Destination 2030 RTP by reference. The plan was federally approved January 8, 2002.

Short- and Long-Term Actions – 2007-2030

- 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 Destination 2030 RTP by reference. The plan was federally accepted July 14, 2005.

CONGESTION MANAGEMENT PROGRAM ELEMENT

As with TEA-21 and ISTEA, 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 System requirements are similar to the optional California requirements; in fact, the CMS 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 Final Rule for the Federal Management and Monitoring Systems defines an effective Congestion Management System (Program) 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 biennially updating a Congestion Management Program. 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.

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 lead agency for Traffic Impact Reports;
- 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; and
- Adopt a Transportation Demand Management ordinance prior to their Program conformity findings.

Failure of a local jurisdiction to fulfill these responsibilities could engender loss of a portion of the state gas tax funding.

Contents

The Congestion Management Program includes the following six elements:

- Land Use Impact Analysis: Establishes a process to 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.
- 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, identify frequency and routing of bus service, and coordinate of transit service provided by separate operators throughout Kern County.
- Regional Traffic Model: Predicts level-of-service exceedances, prioritizes the Capital Improvement Program, and analyzes the impacts of land use on the Congestion Management system.
- Transportation Demand Management: Describes programs to promote alternatives to driving alone. These include such activities as carpools, vanpools, transit, bicycles, and park-and-ride lots. These programs will improve air quality in the County and help meet the goals of the Air Quality Attainment Plans.
- Capital Improvement Program: Establishes transportation improvements that can be expected to improve traffic conditions over the next seven years. This program has been developed to make the best use of the funds currently available.
- Deficiency Plan: Prepares a plan of remedial actions when a roadway level of service standard is not maintained on the designated Congestion Management roadway system.

In addition to these components and as a part of the process of developing and monitoring the Program, the implementing agency is required to develop and maintain a traffic data base for use in a countywide model and to monitor the implementation of the Program elements.

Along with State-level requirements, federal transportation funding legislation requires each state to develop and implement a traffic 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 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 operations improvements;
- Measures to encourage high occupancy vehicle (HOV) use;
- Congestion pricing;
- Land use management and activity center strategies;
- Incident management strategies;
- Application of intelligent transportation systems (ITS) technology; and
- Addition of general purpose (mixed flow) traffic lanes.

Kern region's Congestion Management Program will be revised as necessary to reflect all federal congestion management requirements.

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.

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.
- 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 - Statute requires the Program to include a seven-year Capital Improvement Program to maintain or improve the level of service on the Congestion Management system and transit performance standards, and to mitigate regional transportation impacts identified through the Congestion Management Program's land use analysis element.

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	Route 119
Route 14	Route 155
Route 33	Route 166
Route 43	Route 178
Route 46	Route 202
Route 58	Route 204
Route 65	Route 223
Route 99	U.S. 395

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

Figure 2-8 provides a graphic of the highways and principal arterials included in the CMS.

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.

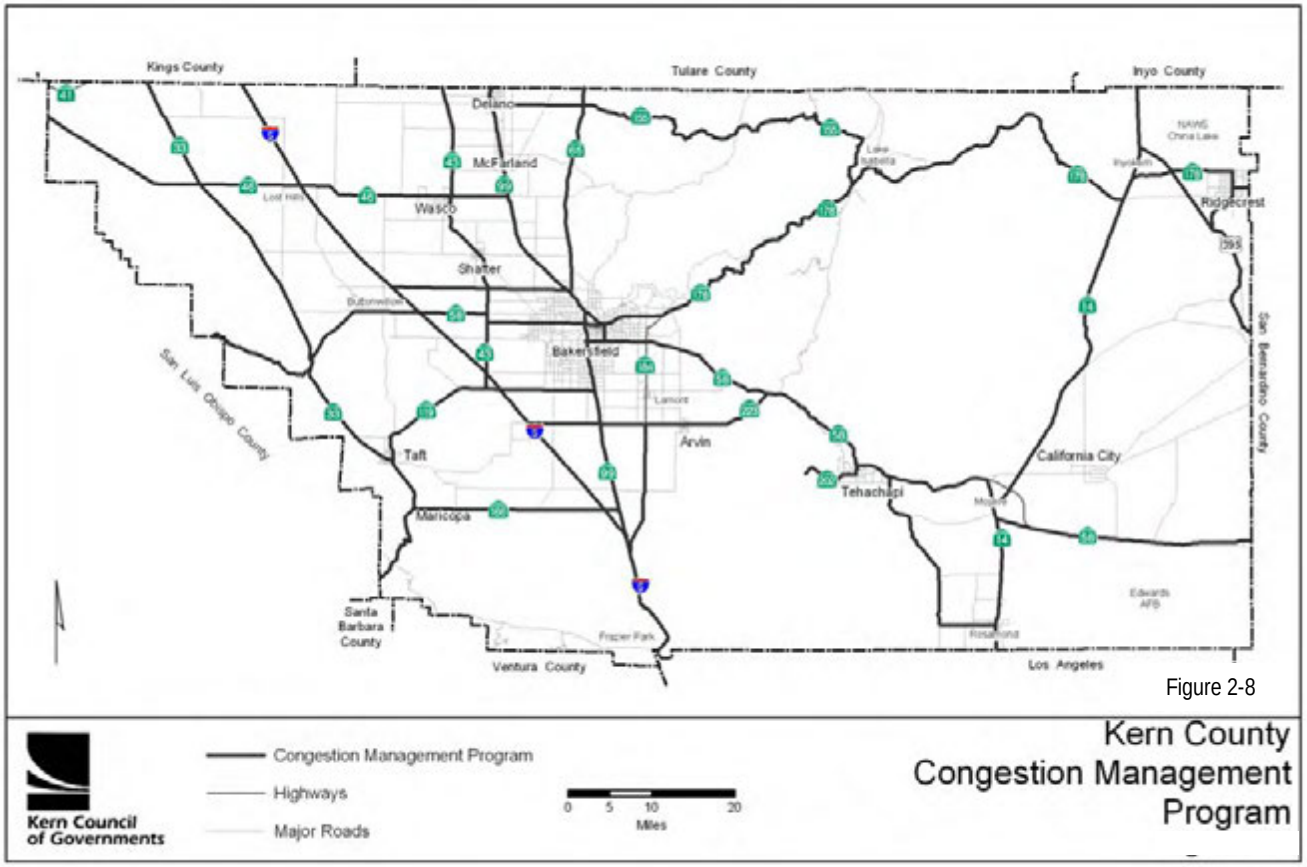

Kings County
Tulare County
Inyo County
Delano
McFarland
Wasco
Shafter
Bakersfield
Lamont
Arvin
Taft
Maricopa
Tehachapi
California City
Ridgecrest
San Luis Obispo County
Santa Barbara County
Ventura County
Los Angeles
San Bernardino County
Kern Council of Governments
Congestion Management Program
Highways
Major Roads
0 5 10 20
Miles
Kern County
Congestion Management
Program

Figure 2-8

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 Lancaster Blvd;
- 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; and
- Seventh Standard Rd to Coffee Rd.

These LOS F designations are considered temporary. As improvements are built, and congestion reduced, the designations will be upgraded to the systemwide standard of LOS E.

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 city's 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 standard does not have direct negative financial impacts.

Kern COG, as the Congestion Management Agency, does not have development review and implementation responsibilities; these are up to the various cities and County. The Agency's authority is limited to establishing and monitoring a countywide Level-of-Service standard, and withholding state gas tax funds if the standard is not met. Because of these differences, the Congestion Management Program standard is not viewed as being in conflict with locally-adopted LOS standards.

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. Kern Council of Governments completes one coordinated and comprehensive review each year; each city and the County is evaluated in the same manner. The cities, County and Caltrans undertake traffic counts on their roads annually. Use of recent peak hour traffic counts eliminates much of the "guesswork" and ensures that the review is based on actual traffic conditions, not estimates or forecasts.

Provisions include:

- All roadway segments on the Congestion Management network shall maintain a level of service of “E” or better; and
- 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 not further degrade.

2.5 RELATIONSHIP TO OTHER PLANS AND PROGRAMS

The Destination 2030 Regional Transportation Plan identifies short- and long-term funding expected to be available over the next 23 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 2029/30). 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 Destination 2030 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 2029-30) 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 Destination 2030 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 EIR; and (3) approving resolutions passed by Kern COG certifying the EIR and approving the RTP. Public involvement will be encouraged throughout the process.

2.7 CONTENTS OF THE DESTINATION 2030 RTP

The project, as defined by CEQA Statutes, Section 21065, is the preparation of the 2007 revision of the Destination 2030 Regional Transportation Plan (RTP). 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. The California Transportation Commission has prepared guidelines (most recently revised in October 2003) 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 last comprehensive EIR on the RTP was completed in June 2006, which addressed transportation improvement projects, programs, and funding reflected in the 2004 RTP together with additional funding from the proposed ½ Cent Sales Tax Measure (Measure I). The proposed Measure did not receive the 2/3^{rds} voter approval it required in order to pass in the November 2006 election. The 2007 revision to the Destination 2030 RTP must be prepared to address possible environmental impacts resulting from its implementation sources of funding that are available for programming.

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 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 Destination 2030 RTP consists of required elements and is organized into various chapters. A description of each Chapter for the RTP follows.

- Chapter 1. Executive Summary;
- Chapter 2. Transportation Planning Policies;
- Chapter 3. Planning Assumptions;
- Chapter 4. Strategic Planning Investments;
- Chapter 5. Financing Transportation;
- Chapter 6. Environmental Justice;
- Chapter 7. Future Links;
- Chapter 8. Monitoring Progress;
- Chapter 9. References; and
- Appendices.

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 EIR 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 Destination 2030 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 Draft EIR 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 EIR[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 EIR for potential permits/actions:

[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).

- 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;
- 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 EIR prior to approval of the 2007 Revision of the Destination 2030 RTP.

2.10 EIR DEVELOPMENT/APPROVAL PROCESS

♦ Draft EIR submitted to Kern COG for distribution	March 5 or 6, 2007
♦ Draft EIR Notice of Completion submitted to the State Clearinghouse for distribution to state agencies	March 5 or 6, 2007
♦ Availability of Draft EIR for public review published In local newspapers and on Kern COG website	March 5 or 6, 2007
♦ Draft EIR available at Kern County Libraries, and Kern COG offices	March 5 or 6, 2007
♦ Draft EIR mailed to organizations, agencies and individuals for review and comment	March 5 or 6, 2007
♦ Public Hearing on Draft EIR	April 19, 2007

- Draft EIR 45-day public comment period closed — April 19. 2007
- Final EIR submitted to Kern COG for distribution — April 26, 2007
- Review of Final EIR by local agencies — April 30 - May 9, 2007
- Public Hearing on Final EIR by Kern COG — May 17, 2007

2.11 ORGANIZATION OF THE EIR

This EIR consists of the following seven 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

Appendices

A Notice of Preparation (NOP)
B NOP Comments

Table 2-4 compares the required contents of an EIR to this Draft EIR. When the required EIR 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

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.

- *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 Program EIR is required for the Regional Transportation Plan or "Project" because it could result in significant environmental impacts considering the following environmental issue areas:

  - *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*;
- *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 Program EIR should focus on the same environmental issues referenced in the NOP and listed above.

- *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 EIR, the preferred project is the Multi-Modal Project Alternative or projects contained in the 2007 Revision of the Destination 2030 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:

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.

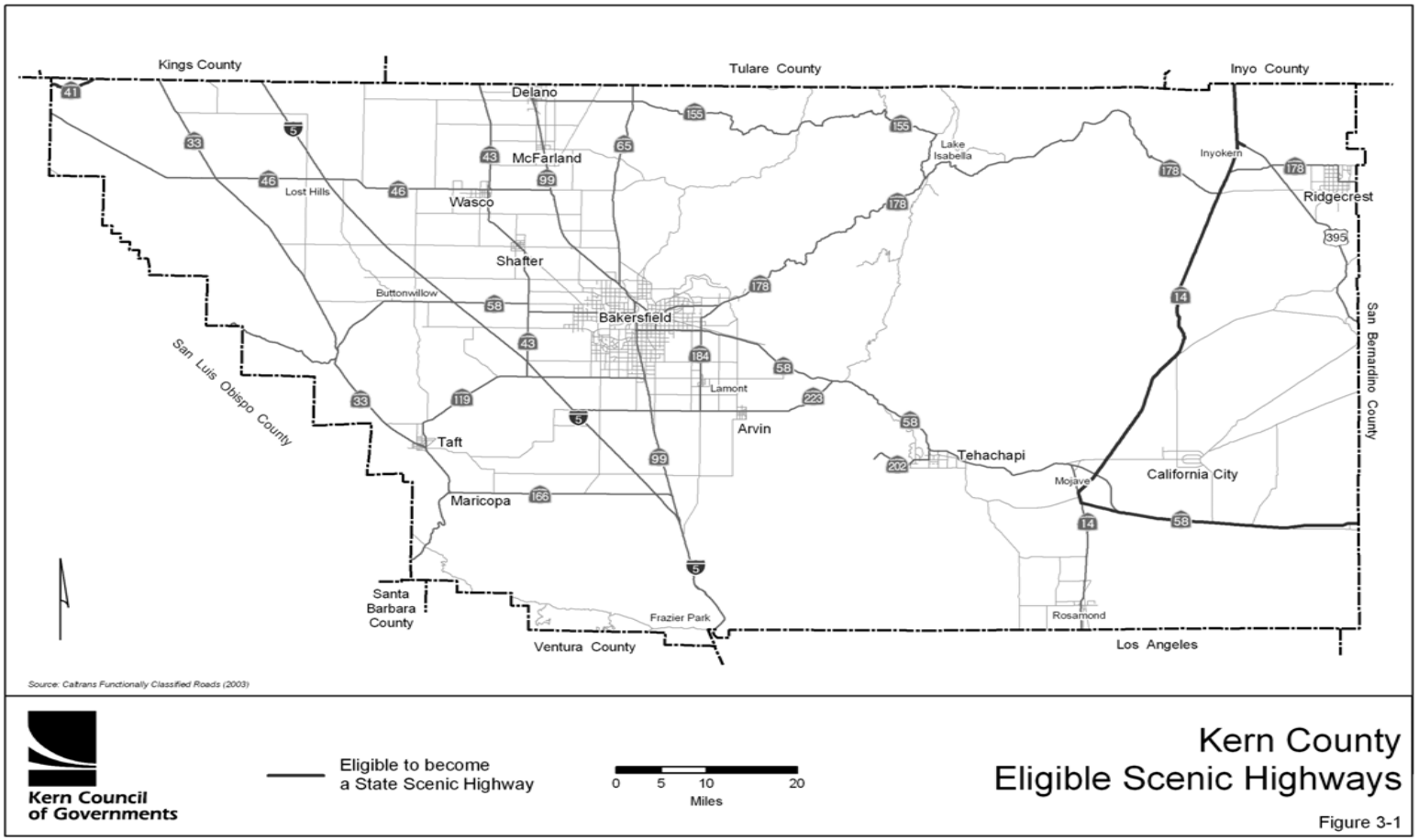
Cities and counties can use open space easements as a mechanism to preserve scenic resources, if they have adopted open-space plans, as provided by the Open Space Easement Act of 1974 and codified in California Government Code (Section 51070 et seq.). According to the Act, a city may acquire or approve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

- 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.


Kings County
Tulare County
Inyo County
Delano
McFarland
Wasco
Lost Hills
Shafter
Buttonwillow
Bakersfield
Lamont
Arvin
Taft
Maricopa
Tehachapi
Mojave
California City
Lake Isabella
Inyokern
Ridgecrest
San Luis Obispo County
San Bernardino County
Santa Barbara County
Ventura County
Frazier Park
Rosamond
Los Angeles
Source: Caltrans Functionally Classified Roads (2003)
Kern Council of Governments
Eligible to become a State Scenic Highway
0 5 10 20
Miles
Kern County
Eligible Scenic Highways
Figure 3-1

Transportation systems have a major influence on human perception of the visual environment. In urban areas, roadway rights-of-way comprise 20-30 percent of the total land area. 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.

View sheds and visual quality are affected by air quality and more specifically, visibility. 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

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 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.

Natural features include land and open spaces such as park and open space areas, mountain areas, beaches, 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. 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.

From a regional perspective, 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;
- 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

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.

- 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

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.

- 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

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.

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

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.

- 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.

State Agencies and Regulations

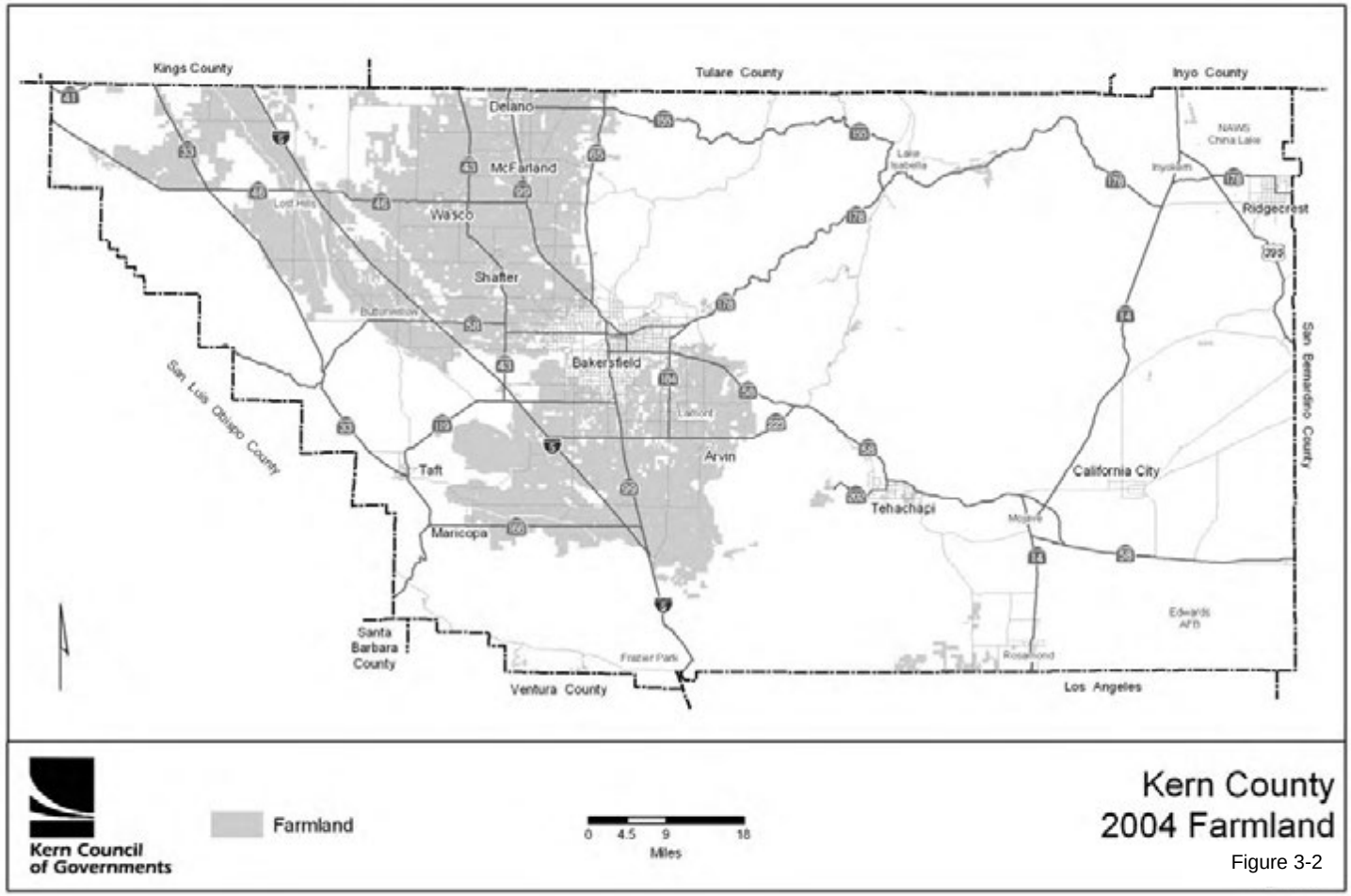
- California Department of Conservation

  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.

Local Agencies and Regulations

- 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.


Kings County
Tulare County
Inyo County
Delano
McFarland
Wasco
Shafter
Bakersfield
Arvin
Taft
Maricopa
Tehachapi
California City
Ridgecrest
NAWS China Lake
Edwards AFB
San Luis Obispo County
Santa Barbara County
Ventura County
Los Angeles
San Bernardino County
Kern Council of Governments
Farmland
0 4.5 9 18
Miles
Kern County
2004 Farmland
Figure 3-2

- 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 – 2,147 (USDA Census of Agriculture, 2002);
- Harvested cropland – over 891,000 acres (2004 County of Kern Department of Agriculture, 2004 Crop Report); and
- Irrigated land – over 811,000 acres (USDA Census of Agriculture, 2002).

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, 2003

		Acres
Land Conservation Act	Prime	674,599
	Non-prime	899,567
Farmland Security Zone	Urban Prime	22,198
	Non-urban Prime	117,441
Total		1,713,804

Source: Division of Land Resource Protection, Williamson Act Status Report 2004, Appendix C

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 2030 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.

- 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.

- 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_{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.

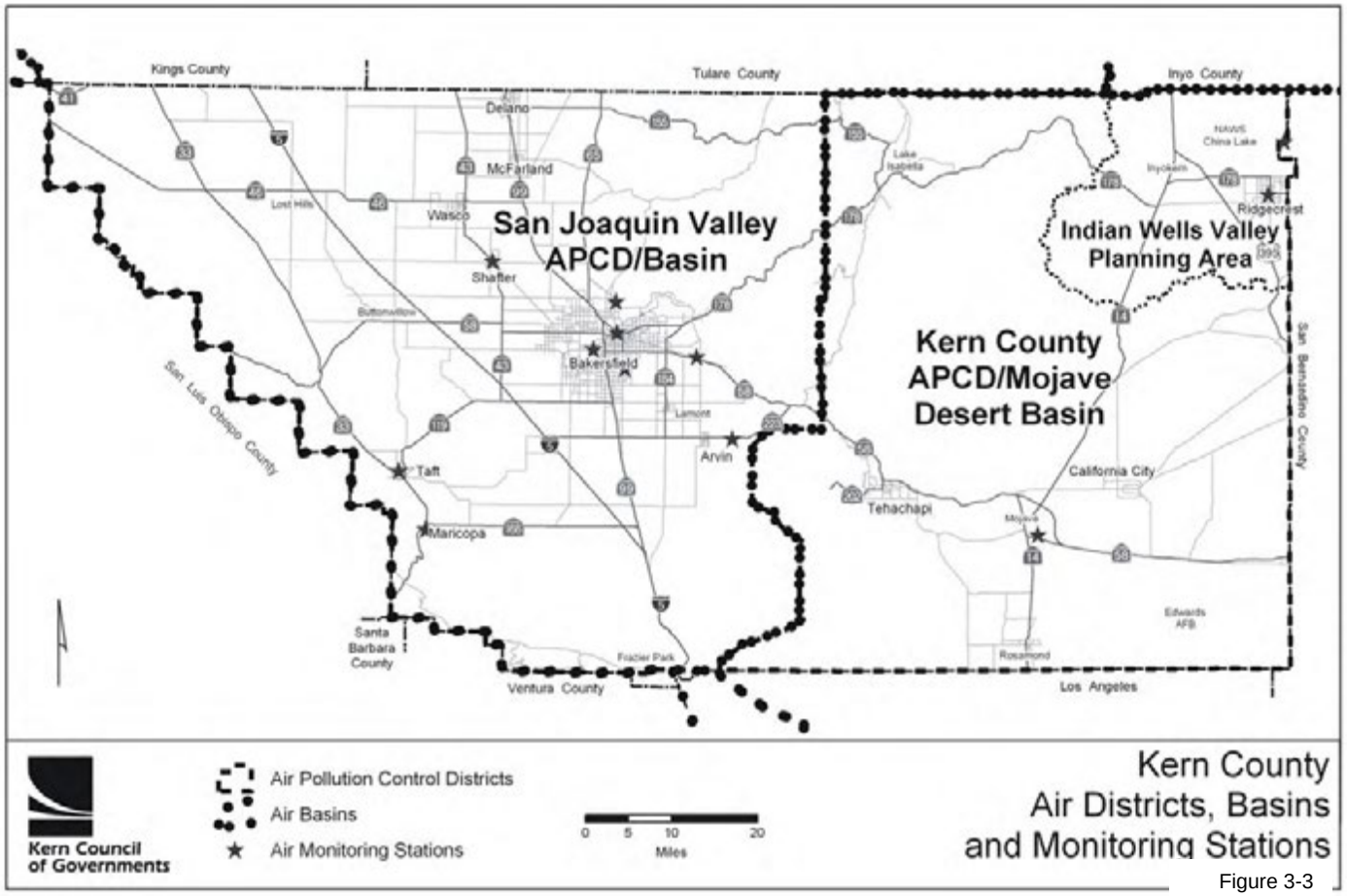

Kings County
Tulare County
Inyo County
Delano
McFarland
Wasco
Shafter
Lost Hills
Buttonwillow
Bakersfield
Lamont
Arvin
Taft
Maricopa
San Luis Obispo County
Santa Barbara County
Ventura County
Frazier Park
Lake Isabella
NAWS China Lake
Inyokern
Ridgecrest
Indian Wells Valley Planning Area
San Joaquin Valley APCD/Basin
Kern County APCD/Mojave Desert Basin
California City
Tehachapi
Mojave
Edwards AFB
Rosamond
Los Angeles
San Bernardino County
Kern Council of Governments
Air Pollution Control Districts
Air Basins
Air Monitoring Stations
0 5 10 20
Miles
Kern County
Air Districts, Basins
and Monitoring Stations

Figure 3-3

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/m^3)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m^3)		0.08 ppm (157 µg/m^3)[8]		
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		50 µg/m^3		
Fine Particulate Matter (PM2.5)	24 Hour	No Separate State Standard		65 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	15 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)	Annual Arithmetic Mean	—	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m^3)	Same as Primary Standard	Gas Phase Chemiluminescence
	1 Hour	0.25 ppm (470 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
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			

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 8-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. *New federal 8-hour ozone and fine particulate matter standards were promulgated by U.S. EPA on July 18, 1997. Contact U.S. EPA for further clarification and current federal policies.*
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.*

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	2003 Maximums	2004 Maximums	2005 Maximums	Standards National	Standards State
Ozone (O_3)	1 hour	.120 ppm	.110 ppm	.110 ppm	0.12 ppm	0.09 ppm
Ozone (O_3)	8 hour	.106 ppm	.100 ppm	.103 ppm	0.08 ppm	0.07 ppm
Carbon Monoxide (CO)	8 hour	2.29 ppm	1.83 ppm	2.20 ppm	9.0 ppm	9.0 ppm
Nitrogen Dioxide (NO_2)	1 hour	.085 ppm	.083 ppm	.074 ppm	---	0.25 ppm
Nitrogen Dioxide (NO_2)	Annual Average	.020 ppm	.019 ppm	.018 ppm	0.053 ppm	---
Particulates (PM_{10})	24 hour	110 mg/m^3	83.0 mg/m^3	102.0 mg/m^3	150 mg/m^3	50 mg/m^3
Particulates (PM_{10})	Federal Annual Arithmetic Mean	47.7 mg/m^3	---	39.6 mg/m^3	50 mg/m^3	20 mg/m^3
Particulates ($PM_{2.5}$)	24 hour	59.3 mg/m^3	70.0 mg/m^3	54.7 mg/m^3	65 mg/m^3	---
Particulates ($PM_{2.5}$)	Federal Annual Arithmetic Mean	17.2 mg/m^3	18.9 mg/m^3	---	15 mg/m^3	12 mg/m^3

Source: CARB Website, 2006

Table 3-4
Maximum Pollutant Levels at Maricopa's Stanislaus Monitoring Station

Pollutant	Time Averaging	2003 Maximums	2004 Maximums	2005 Maximums	Standards National	Standards State
Ozone (O_3)	1 hour	.107 ppm	.102 ppm	.102 ppm	0.12 ppm	0.09 ppm
Ozone (O_3)	8 hour	.101 ppm	.094 ppm	.096 ppm	0.08 ppm	0.07 ppm
Carbon Monoxide (CO)*	8 hour	2.29 ppm	1.83 ppm	2.20 ppm	9.0 ppm	9.0 ppm
Nitrogen Dioxide (NO_2)*	1 hour	.085 ppm	.083 ppm	.074 ppm	---	0.25 ppm
Nitrogen Dioxide (NO_2)*	Annual Average	.020 ppm	.019 ppm	.018 ppm	0.053 ppm	---
Particulates (PM_{10})*	24 hour	110 mg/m^3	83.0 mg/m^3	102.0 mg/m^3	150 mg/m^3	50 mg/m^3
Particulates (PM_{10})*	Federal Annual Arithmetic Mean	47.7 mg/m^3	---	39.6 mg/m^3	50 mg/m^3	20 mg/m^3
Particulates ($PM_{2.5}$)*	24 hour	59.3 mg/m^3	70.0 mg/m^3	54.7 mg/m^3	65 mg/m^3	---
Particulates ($PM_{2.5}$)*	Federal Annual Arithmetic Mean	17.2 mg/m^3	18.9 mg/m^3	---	15 mg/m^3	12 mg/m^3

Source: CARB Website, 2006

* Pollutant is not available at Maricopa Station. Results are from the closest monitoring Station to Maricopa. (5558 California Avenue-Bakersfield)

Table 3-5
San Joaquin Valley Air Basin – District Attainment Status

Pollutant	Designation/Classification Federal Standards	State Standards
Ozone - 1 Hour	Non-attainment/Extreme	Non-attainment/Serious
Ozone - 8 Hour	Non-attainment/Serious	Non-attainment
PM10	Non-attainment/Serious	Non-attainment
PM2.5	Non-attainment	Non-attainment
Carbon Monoxide	Unclassified/Attainment	Attainment
Nitrogen Dioxide	Unclassified/Attainment	Attainment
Sulfur Dioxide	Attainment	Attainment
Lead Particulates	No Designation	Attainment

- 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	2003 Maximums	2004 Maximums	2005 Maximums	Standards National	Standards State
Ozone (O_3)	1 hour	.119 ppm	.121 ppm	.113 ppm	0.12 ppm	0.09 ppm
Ozone (O_3)	8 hour	.103 ppm	.090 ppm	.096 ppm	0.08 ppm	0.70 ppm
Carbon Monoxide (CO)*	8 hour	1.88 ppm	1.72 ppm	1.54 ppm	9.0 ppm	9.0 ppm
Nitrogen Dioxide (NO_2)	1 hour	.073 ppm	.064 ppm	.044 ppm	---	0.25 ppm
Nitrogen Dioxide (NO_2)	Annual Average	.009 ppm	.008 ppm	---	0.053 ppm	---
Particulates (PM_{10})	24 hour	97.0 mg/m^3	41.0 mg/m^3	42.0 mg/m^3	150 mg/m^3	50 mg/m^3
Particulates (PM_{10})	Federal Annual Arithmetic Mean	20.9 mg/m^3	---	---	50 mg/m^3	20 mg/m^3
Particulates ($PM_{2.5}$)	24 hour	23.2 mg/m^3	17.8 mg/m^3	18.1 mg/m^3	65 mg/m^3	0.25 ppm
Particulates ($PM_{2.5}$)	Federal Annual Arithmetic Mean	---	---	---	15 mg/m^3	12 mg/m^3

Source: CARB Website, 2006

Table 3-7
Mojave Air Basin – District Attainment Status

Pollutant	Designation/Classification			
	Federal Standards			State Standards
	KCAPCD	Kern River /Cummings Valleys*	Indian Wells Valley**	
Ozone - 1 Hour	Attainment/Maintenance			Moderate Nonattainment
Ozone - 8 Hour	Subpart 1 Nonattainment		Unclassifiable/ Attainment	Not Yet Designated
PM10	Unclassifiable/Attainment	Serious Nonattainment	Attainment/ Maintenance	Nonattainment
PM2.5	Unclassifiable/Attainment			Unclassified
Carbon Monoxide	Unclassifiable/Attainment			Unclassified
Nitrogen Dioxide	Unclassified			Attainment
Sulfur Dioxide	Unclassified			Attainment
Lead Particulates	No Designation			Attainment

*The Kern River Valley and Cummings Valley are still included in the federally designated San Joaquin Valley PM10 Serious Nonattainment Area
**Federal designations for PM10 and 8-hour ozone have split the Indian Wells Valley out as a separate planning area from the rest of the KCAPCD
Source: Kern County APCD, April 2006

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 Control Measures (TCMs) focus on the reduction of motor vehicle emissions by reduction of vehicle use or changing traffic flow or congestion conditions. The 1994 San Joaquin Valley Transportation Control Measure Program identified the following nine (9) measures determined to still be applicable and reasonably available to local agencies in the Valley:

    - Traffic flow improvements;
    - Public transit;
    - Passenger rail and support facilities;
    - Rideshare programs;
    - Park-and-ride lots;
    - Bicycling programs;
    - Trip reduction ordinances;
    - Telecommuting; and
    - Alternative work schedules.

  The County of Kern and its eleven (11) incorporated cities, private business, and government offices implement some of these 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 Tehachapis 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.

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 can cause eye irritation and impair respiratory functions. Accumulations of ozone depend heavily on weather patterns and thus vary substantially from year to year. However, because ozone is created through human activities, human efforts to control ozone must be recognized. Historic and ongoing air pollution control programs, directed at reducing ozone precursors, have been implemented to improve air quality. Ozone is produced in the atmosphere through photochemical reactions involving reactive organic gases (ROG) and nitrous oxides (NO_x). The Ozone (O_3) 1-hour state standard in Bakersfield has been exceeded an average of 78 times between 2003 and 2005 and the federal standard was exceeded 0 times. There is no state standard for Ozone (O_3) 8-hour. The federal 8-hour standard was exceeded 88 times between 2003 and 2006. In Maricopa, the Ozone (O_3) 1-hour state standard has been exceeded an average of 28 times between 2003 and 2005 and the federal standard was exceeded 0 times. The Ozone (O_3) 8-hour federal standard in Maricopa has been exceeded 53 times between 2003 and 2005. In Mojave (Mojave Air Basin), the Ozone (O_3) 1-hour state standard has been exceeded an average of 47 times between 2003 and 2005 and the federal standard was exceeded 0 times. The Ozone (O_3) 8-hour federal standard in Mojave has been exceeded 39 times between 2003 and 2005.

- Suspended PM (PM10 and PM2.5)
  PM_{10} refers to particulate matter less than 10 microns in diameter that can be inhaled and cause health effects. Common sources of particulates include fugitive windblown dust from "open" fields, dust from paved and unpaved roads, agricultural operations, and other localized sources such as from construction and fireplaces. Very small particulates of certain substances can cause direct lung damage, or can contain absorbed gases that

may be harmful when inhaled. Particulates can also damage materials and reduce visibility. Twenty-four hour PM_{10} standards are exceeded occasionally at SJVAB monitoring stations (the state standard in Bakersfield was violated 66 times between 2003 and 2005 and the federal standard was violated 0 times). The PM_{10} state standards in Maricopa were violated 66 times between 2003 and 2005 and the federal standard was violated 0 times. The PM_{10} state standards in Mojave (Mojave Air Basin) were violated 2 times between 2003 and 2005 and the federal standard was violated 0 times. Twenty-four hour $PM_{2.5}$ standards are also exceeded occasionally at SJVAB monitoring stations. There is no state standard for $PM_{2.5}$ The federal standard in Bakersfield was violated 3 times between 2003 and 2005. The PM_{10} federal standards in Maricopa were violated 3 times between 2003 and 2005 and 0 times in Mojave in the Mojave Air Basin.

- Carbon Monoxide (CO)
  Because CO is emitted primarily by motor vehicles and is a localized pollutant, ambient CO concentrations normally follow the spatial and temporal distributions of vehicular traffic. CO concentrations are also influenced by meteorological factors such as wind speed and atmospheric mixing. High levels of CO can impair the transport of oxygen in the bloodstream and thereby aggravate cardiovascular disease and cause fatigue, headaches, and dizziness. State and federal CO standards have not been exceeded either the Bakersfield, Maricopa or Mojave monitoring stations between 2003 and 2005.

- Nitrogen Dioxide (NO_2)
  Major sources of nitrogen dioxide (NO_2), essential to the formation of photochemical smog, are vehicular, and industrial fuel combustion. NO_2 is the "orange brown" colored gas evident during periods of heavy air pollution. NO_2 increases respiratory disease and irritation and may reduce resistance to certain infections. The standards for NO_2 have been met in the Air Basin, and the Air District does not expect the standards to be exceeded in the near future.

- Sulfur Dioxide (SO_2)
  The major source of sulfur dioxide (SO_2) is the combustion of high-sulphur fuels for oil and gas extraction, electricity generation, petroleum refining, and shipping. In humid atmospheres, sulfur oxides can react with vapor to produce sulfuric acid, a component of acid rain. SO_2 can irritate the lungs, damage vegetation and materials, and reduce visibility. The standards for SO_2 have been met in the Air Basin, and the Air District does not expect the standards to be exceeded in the near future.

- Lead (Pb)
  Gasoline-powered automobile engines are a major source of airborne lead, although the use of leaded fuel is mostly eliminated. Lead can cause blood effects such as anemia and the inhibition of enzymes involved in blood synthesis. Lead may also affect the central nervous and reproductive systems. Ambient lead levels have dropped dramatically as the percentage of motor vehicles using unleaded gasoline continues to increase. The standards for lead have been met in the Air Basin, and the District does not expect the standards to be exceeded in the future.

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 Destination 2030 RTP and other plans and programs. The Findings can be found on the Kern COG web site at www.kerncog.org. 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, such as PM_{10}, 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} 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 the more than 55 percent increase in population projected by the Year 2030. 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

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.

Table 3-8A
Conformity Results for RTP Projects
Emfac Results Summary -- KERN (SJV)

Pollutant	Scenario	Emissions Total (tons/day)		DID YOU PASS?	
		CO		CO	
	2010 Budget	180			
				2008 Budget	2010 Budget
Carbon Monoxide	2010	**112.93**		**YES**	**YES**
	2018 Budget	180			
	2018	**68.3**			
	2020	**57.2**		**YES**	**YES**
	2030	**41.58**		**YES**	**YES**
		ROG	**NOx**	**ROG**	**NOx**
	2008 Budget	11.5	32.7		
	2008	**11.5**	**32.6**	**YES**	**YES**
Ozone	2010 Budget	9.6	27.2		
	2010	**9.6**	**27.0**	**YES**	**YES**
	2013	**7.9**	**20.6**	**YES**	**YES**
	2020	**5.6**	**11.3**	**YES**	**YES**
	2030	**4.2**	**7.2**	**YES**	**YES**
		PM-10	**NOx**	**PM-10**	**NOx**
	2008 Budget	10.7	34.2		
	2008	**10.6**	**34.1**	**YES**	**YES**
	2010 Budget	10.8	28.4		
	2010	**10.7**	**28.2**	**YES**	**YES**
PM-10	2010 Adjusted Budget	13.1	25.0		
	2020	**13.1**	**11.9**	**YES**	**YES**
	2010 Adjusted Budget	**16.1**	**20.5**		
	2030	**16.1**	**20.5**	**YES**	**YES**

Table 3-8B
Conformity Results for RTP Projects
PM2.5 Conformity Results Summary -- KERN

Pollutant	Scenario	Emissions Total (tons/day)			DID YOU PASS?	
		PM-2.5	NOx		PM-2.5	NOx
PM-2.5 24-Hour Standrad	2002 Base Year	1.1	53.3			
	2010	0.9	28.2		YES	YES
	2020	0.9	11.9		YES	YES
	2030	1.0	7.6		YES	YES
		PM-2.5	NOx		PM-2.5	NOx
PM-2.5 Annual Standard	2002 Base Year	402	19455			
	2010	329	10293		YES	YES
	2020	329	4344		YES	YES
	2030	365	2774		YES	YES

Table 3-8C
Conformity Results for RTP Projects
Emfac Results Summary -- KERN (Mojave Desert)

Pollutant	Scenario	Emissions Total (tons/day)			DID YOU PASS?	
		ROG	NOx		ROG	NOx
Ozone	2005 Budget	3.9	7.1			
	2009	2.4	4.8		YES	YES
	2015 Budget	2.1	4.0			
	2015	1.6	3.0		YES	YES
	2020	1.2	2.2		YES	YES
	2030	1.0	1.5		YES	YES

Emfac Results Summary -- KERN (Indian Wells Valley)

Pollutant	Scenario	Emissions Total (tons/day)		DID YOU PASS?	
		PM-10		PM-10	NOx
PM-10	2013 Budget	1.7			
	2013	1.2		YES	YES
	2020	1.2		YES	YES
	2030	1.3		YES	YES

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 Destination 2030 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 2030. As a result, long-term emission impacts cannot be reduced to a less than significant level.

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 Destination 2030 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 Kern COG RTP Environmental Impact Report (EIR), 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.

- 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 "nonnavigable, 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 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.

- California Department of Fish and Game (CDFG)

  The CDFG jurisdiction includes rivers, streams, and lakes pursuant to Sections 1600-1616 of the California Fish and Game Code (Code). Streams are defined in the Code as "a body of water that flows at least periodically... through a bed or channel having banks, and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation."

  The CDFG defines wetlands as "lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is covered by shallow water." For purposes of this classification, wetlands must have one or more of the following three attributes: (1) at least periodically, the land supports hydrophytes predominantly; (2) the substrate is predominantly undrained hydric soil; and (3) the substrate is non-soil and is saturated with water or covered by shallow water at some time of the growing season of each year. The CDFG only requires the presence of one of the above criteria to designate wetlands.

- 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
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

Table 3-9
Sensitive Plant Species Known to Occur within the Biological Resources Study Area

Scientific Name	Common Name	Federal Status	State Status	CNPS
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
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

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]
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
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

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]
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.

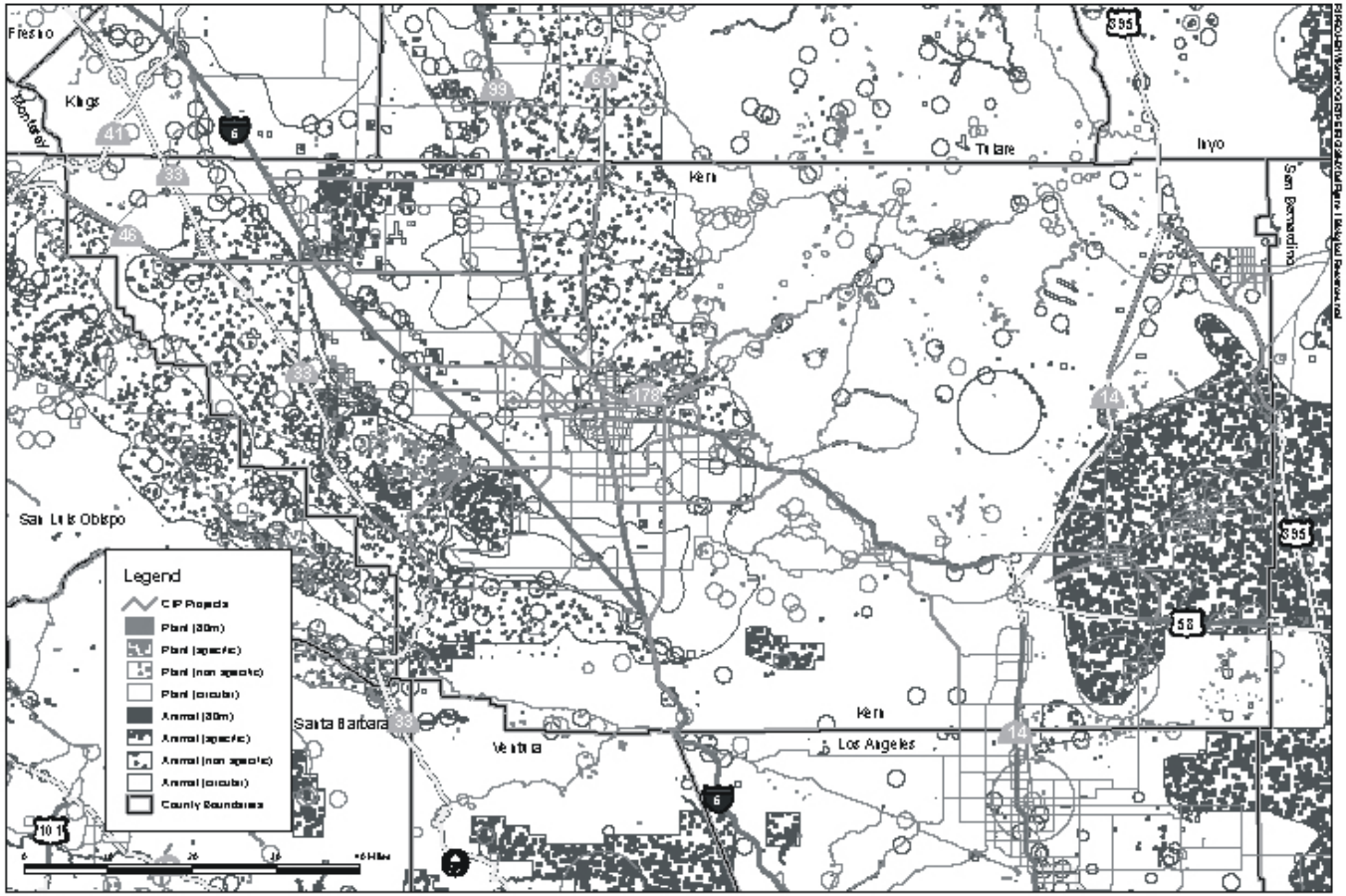
[1] California Special Concern species: It is the goal and responsibility of the CDFG to maintain viable populations of all native species. To this end, the CDFG has designated certain vertebrate species as "Species of Special Concern" because of declining population levels, limited ranges, and/or continuing 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.

Wildlife Movement

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:



Source: CNDDB (2005).

Figure 3-4

Kern County Biotic Resources

TCB | AECOM — Kern COG RTP EIR

- 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 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, 2005; and CNPS, 2005;
  - Wildlife — CNDDB, 2005; and
  - Plant Communities — CNDDB, 2005.

  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

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.

- 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 Destination 2030 RTP, impacts to these resources would remain a potentially significant impact at a regional level.

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.

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 and sensitive species during the individual improvement project design phase.

- Focused sensitive plant and wildlife species 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 surveys will be conducted during the appropriate flowering season for sensitive plant species with the potential to occur within the individual improvement project area.

- If sensitive plant or wildlife species 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, silt fencing, exclusion fencing and/or appropriate compensation where impacts cannot be fully avoided.

- Locations of sensitive species and sensitive 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 or wildlife species 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 abandon the nest.

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

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

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

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.

3.5 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.

- 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).*

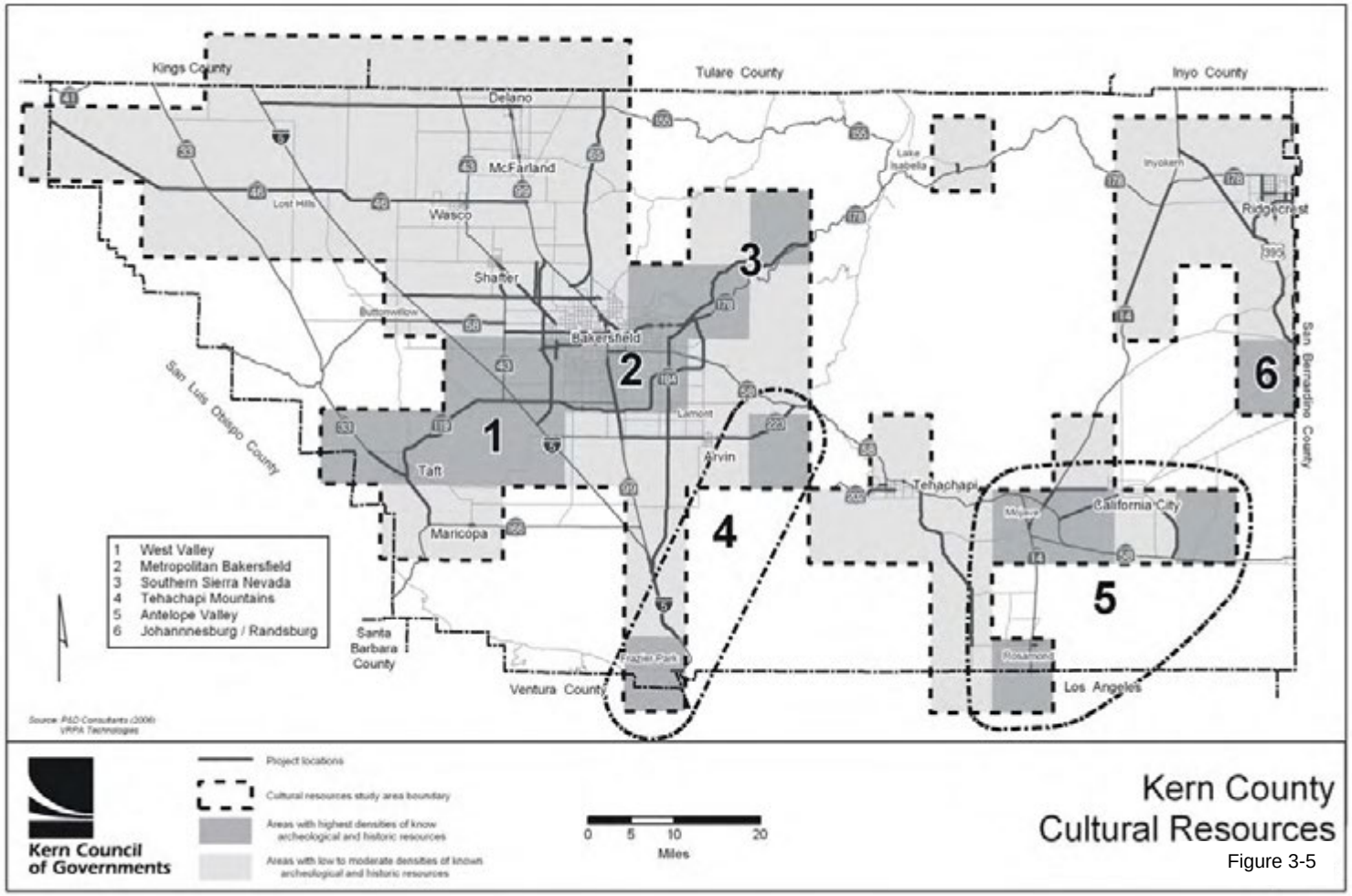
- West Valley

  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.

  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.


Kings County
Tulare County
Inyo County
San Luis Obispo County
San Bernardino County
Santa Barbara County
Ventura County
Los Angeles
Delano
McFarland
Wasco
Shafter
Buttonwillow
Bakersfield
Lamont
Arvin
Taft
Maricopa
Tehachapi
California City
Lake Isabella
Inyokern
Ridgecrest
Frazier Park
Rosamond
1
2
3
4
5
6
1 West Valley
2 Metropolitan Bakersfield
3 Southern Sierra Nevada
4 Tehachapi Mountains
5 Antelope Valley
6 Johannnesburg / Randsburg
Source: P&D Consultants (2006)
VRPA Technologies
Project locations
Cultural resources study area boundary
Areas with highest densities of know archeological and historic resources
Areas with low to moderate densities of known archeological and historic resources
0 5 10 20
Miles
Kern Council of Governments
Kern County
Cultural Resources
Figure 3-5

- 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 2030 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.

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.

Impacts

Cultural resources may be encountered during development of projects proposed in the Destination 2030 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 Program EIR. 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 Program EIR.

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 Destination 2030 RTP, cumulative impacts to cultural resources would remain a potentially significant impact at a regional level.

3.6 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.

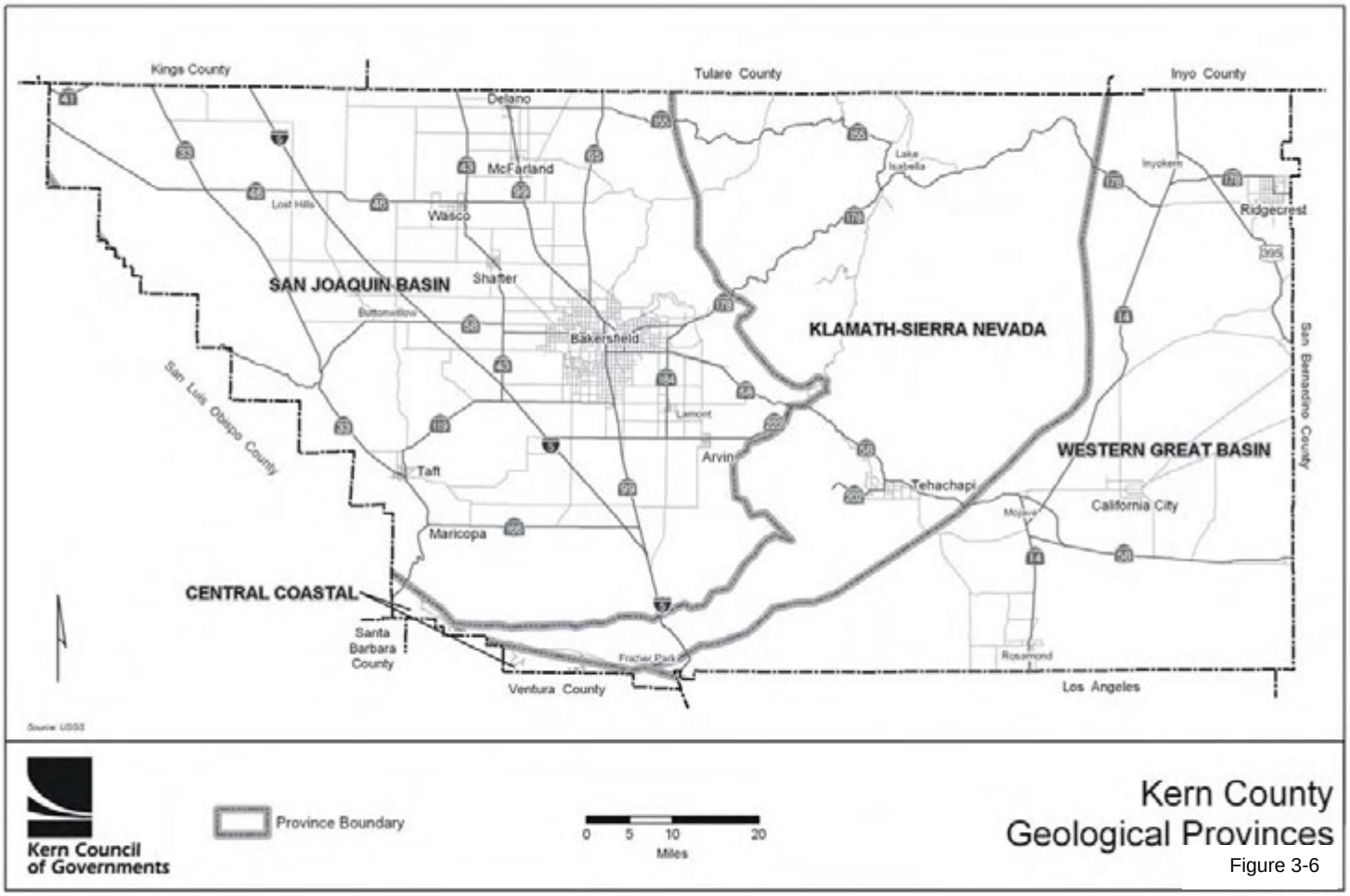
- Sierra Nevada – The southern Sierra Nevada province, comprising the southern Sierra Nevada and Tehachapi Mountains, contains most of the high mountains in Kern County. Granitic rocks underlie most of the southern part of the province and are part of the Sierra Nevada batholith.

- 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)


Kings County
Tulare County
Inyo County
Delano
McFarland
Wasco
Lost Hills
Shafter
Buttonwillow
Bakersfield
SAN JOAQUIN BASIN
KLAMATH-SIERRA NEVADA
WESTERN GREAT BASIN
San Luis Obispo County
Taft
Maricopa
Lamont
Arvin
Tehachapi
California City
Lake Isabella
Inyokern
Ridgecrest
San Bernardino County
CENTRAL COASTAL
Santa Barbara County
Ventura County
Los Angeles
Rosamond
Source: USGS
Kern Council of Governments
Province Boundary
0 5 10 20
Miles
Kern County
Geological Provinces
Figure 3-6

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 3-11).

Table 3-11
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.

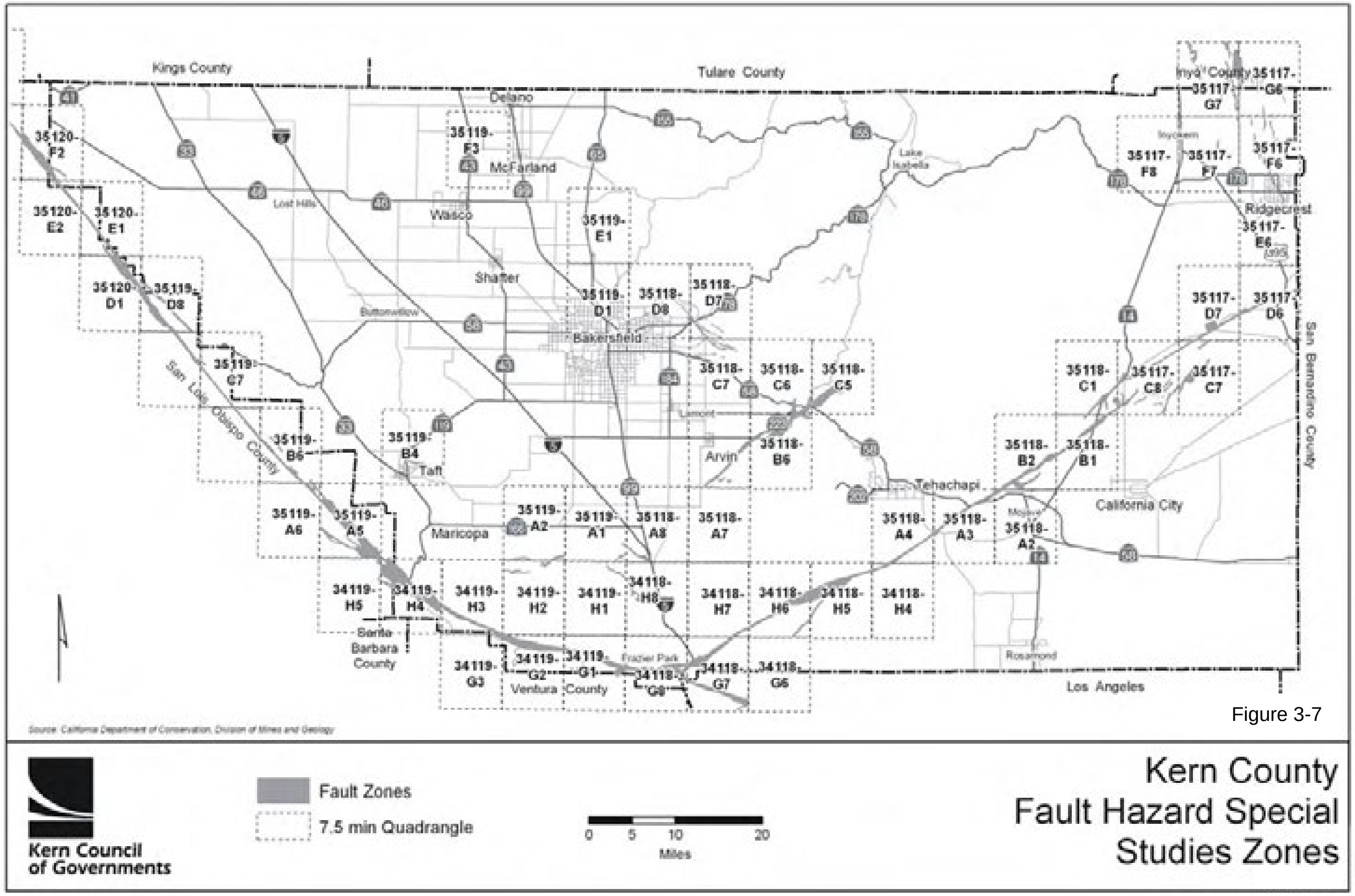
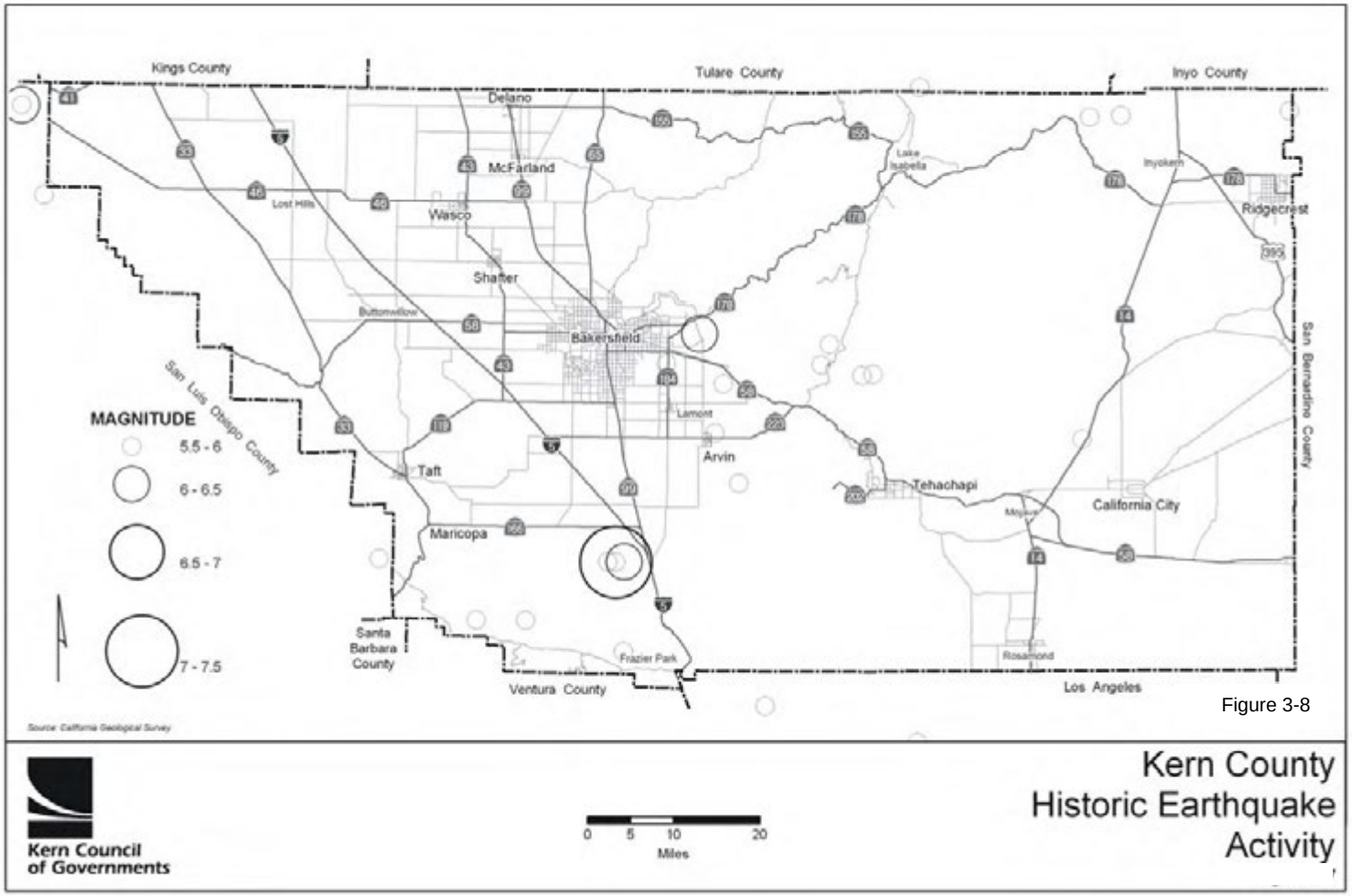

Kings County
Tulare County
Inyo County
San Bernardino County
Los Angeles
San Luis Obispo County
Santa Barbara County
Ventura County
Delano
McFarland
Wasco
Lost Hills
Shafter
Buttonwillow
Bakersfield
Lamont
Arvin
Taft
Maricopa
Frazier Park
Tehachapi
Mojave
Rosamond
California City
Ridgecrest
Inyokern
Lake Isabella
Source: California Department of Conservation, Division of Mines and Geology
Kern Council of Governments
Fault Zones
7.5 min Quadrangle
0 5 10 20
Miles

Figure 3-7

Kern County
Fault Hazard Special
Studies Zones


Kings County
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Lost Hills
Shafter
Buttonwillow
Bakersheld
Lamont
Arvin
Taft
Tehachapi
California City
Maricopa
Lake Isabella
Inyokern
Ridgecrest
San Bernardino County
San Luis Obispo County
Santa Barbara County
Ventura County
Frazier Park
Rosamond
Los Angeles
MAGNITUDE
5.5 - 6
6 - 6.5
6.5 - 7
7 - 7.5
Source: California Geological Survey
Kern Council of Governments
0 5 10 20
Miles
Kern County
Historic Earthquake
Activity

Figure 3-8

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 3-11 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] Seismic Safety and Safety Element of the Kern County General Plan, Kern County Planning Department, 2004
[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).

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 3.6.1

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.

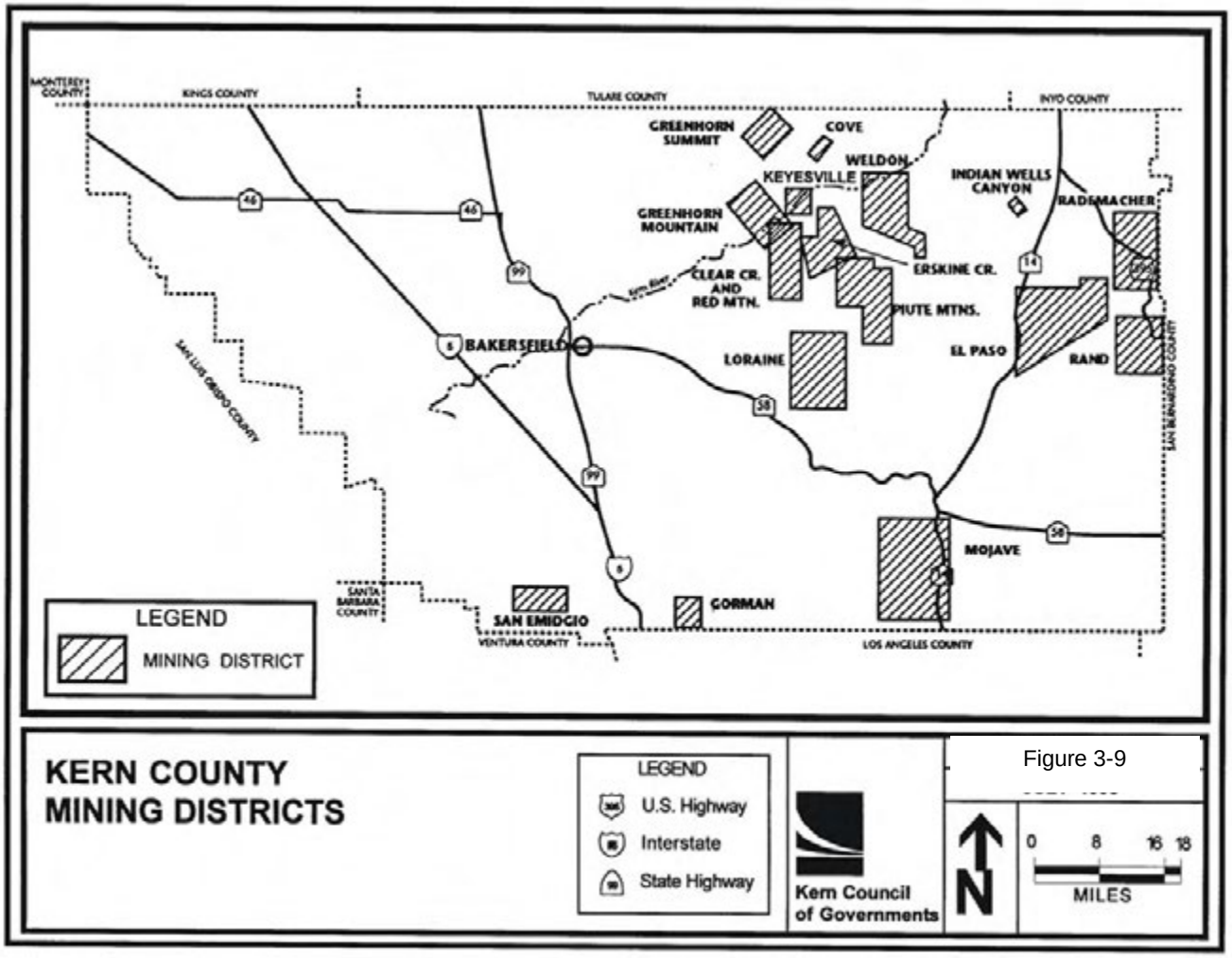
Significance After Mitigation

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 3.6.2

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.


MONTEREY COUNTY
KINGS COUNTY
TULARE COUNTY
INYO COUNTY
GREENHORN SUMMIT
COVE
WELDON
KEYESVILLE
INDIAN WELLS CANYON
RADIMACHER
GREENHORN MOUNTAIN
CLEAR CR. AND RED MTN.
ERSKINE CR.
PIUTE MTNS.
BAKERSFIELD
LORAINE
EL PASO
RAND
SAN LUIS OBISPO COUNTY
SAN BERNARDINO COUNTY
MOJAVE
SANTA BARBARA COUNTY
SAN EMIDGIO
VENTURA COUNTY
GORMAN
LOS ANGELES COUNTY
LEGEND
MINING DISTRICT
KERN COUNTY
MINING DISTRICTS
LEGEND
U.S. Highway
Interstate
State Highway
Kern Council of Governments
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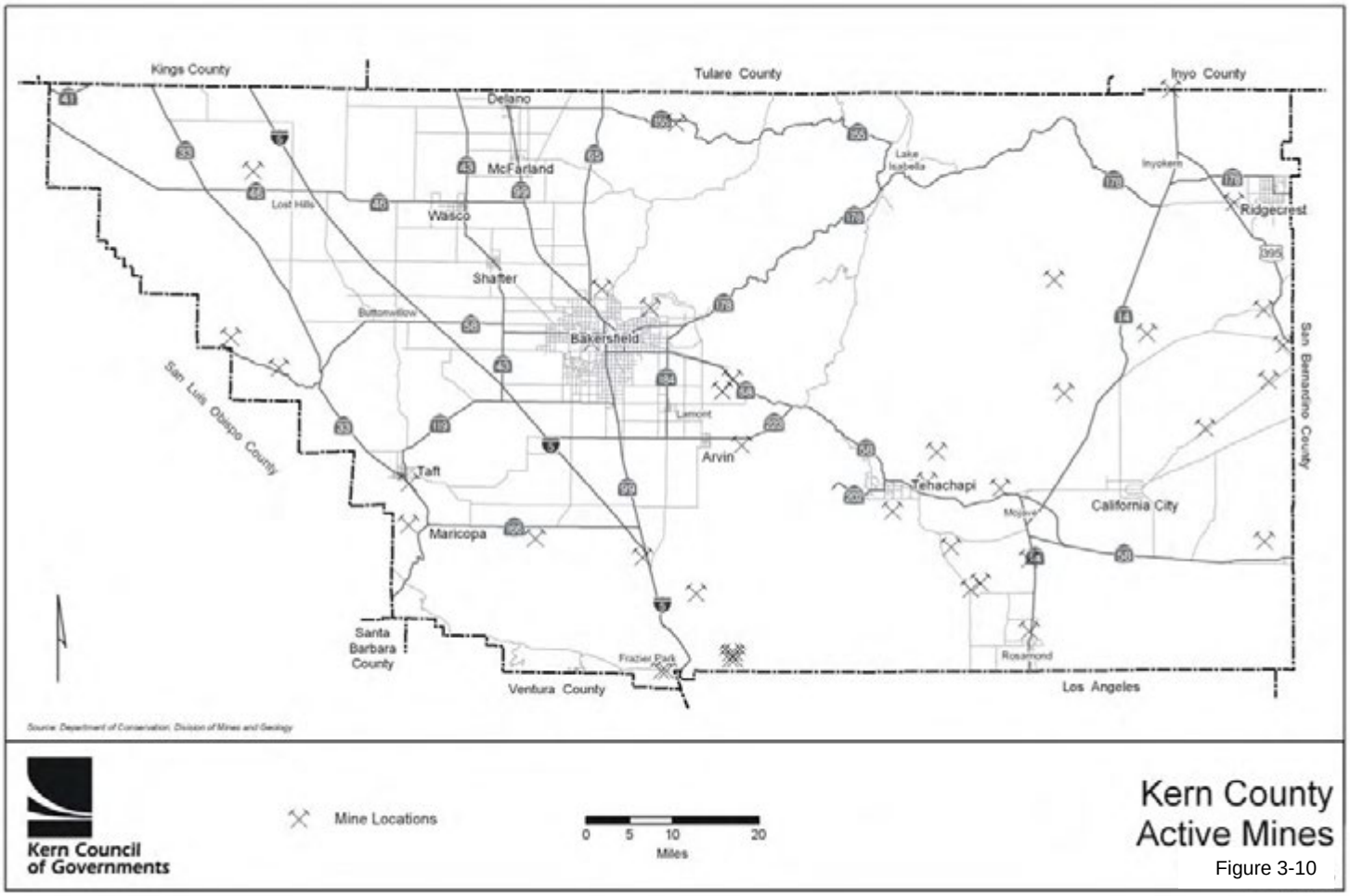
0 8 16 18
MILES

Figure 3-9


Kings County
Tulare County
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Delano
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Lost Hills
Shafter
Buttonwillow
Bakersheld
San Luis Obispo County
Taft
Maricopa
Lamont
Arvin
Tehachapi
California City
Mojave
Lake Isabella
Inyokern
Ridgecrest
San Bernardino County
Santa Barbara County
Ventura County
Frazier Park
Rosamond
Los Angeles
Source: Department of Conservation, Division of Mines and Geology
Kern Council of Governments
Mine Locations
0 5 10 20
Miles
Kern County
Active Mines
Figure 3-10

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.

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 3.6.2

Some improvement projects require significant earthwork, increasing potential slope failure and long-term erosion. Earthwork can also alter unique geologic features. Individual improvement 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 improvement 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.

New roadways can also permanently alter unique geologic features, particularly in canyons, coastlines, and mountain passes. However, most of the improvement projects would occur in urbanized portions of the region or in existing transportation corridors. Nonetheless, new lanes may require earthwork that would affect existing natural geologic features.

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 3.6.3

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: 3.6.4

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

- Individual improvement project structures will be constructed by responsible agencies to the seismic standards contained in the most recent edition of the Uniform Building Code (UBC).

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: 3.6.5

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: 3.6.6

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.

3.7 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.*

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 (AB 2185, AB 2187, and AB 3777) 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 3.7.1

Construction and maintenance activities associated with the implementation of the RTP combined with projects and programs contained in the RTP could potentially result in solvent and architectural coating activities that may be considered hazardous if not used, stored, or disposed of properly. Any excesses in these materials, which exist upon completion of transportation projects in the RTP could be considered hazardous materials or wastes that may need to be disposed of properly. This is a potential impact. However, these left over materials can likely be stored properly and used for other transportation projects or purposes. Such use or reuse would reduce the amount of excess materials that would require disposal. In addition, steps can be taken to minimize the risk associated with handling hazardous materials in the process of transportation facility construction. Therefore, the potential impact is considered less than significant and no mitigation is required.

Mitigation Measures

Not applicable.

Significance After Mitigation

Less than significant.

Impact 3.7.2

Implementation of the projects and programs contained in the RTP could potentially result in decreased safety risks as a result of enhanced hazardous materials transport options.

The proposed Project could result in one of two outcomes where the transport of hazardous material is concerned:

- It is likely that potential routes for the transport of hazardous materials will become safer due to proposed improvements in the RTP. Hazardous materials are generally transported along the regional roadway network. Exceptions include gasoline and other fuels, which are often transported to their destinations along on local streets and roads. The RTP includes congestion reduction measures to improve transportation facilities in a number of corridors throughout the County. This is considered a potential beneficial effect, because these facilities could become safer due to reduced congestion levels resulting in fewer accidents; and/or

- Congestion is projected to decrease in 20 years as a result of the proposed Project improvements. The Plan indicates that congestion under the RTP is expected to decrease compared to the No Project and No Build Alternatives. This is considered a potential beneficial effect, because the decrease in congestion could contribute to reductions in accident rates, including those corridors where no transportation improvement projects are proposed.

Mitigation Measures

Beneficial impact. No mitigation needed.

Significance After Mitigation

Less than significant.

Hazardous wastes may be liquid, solid or sludge. The waste is considered hazardous if it has any of these four characteristics, ignitable, reactive, corrosive, and/or toxic. The wastes may be the by-products of manufacturing processes or simply unwanted commercial products. Hazardous waste generators in Kern County include industries, businesses, public and private institutions, and households. Because the valley portion of the County is largely agricultural, the use and storage of pesticides is prominent as well.

County Department of Health Services (DHS) classifies waste into three categories: "large quantity", or those who produce 1,000 kilograms or more per month; "small quantity", or those producing between 100 and 1,000 kilograms per month, including businesses, farms and households; and "household wastes", which includes solvents, pesticides, and miscellaneous wastes, such as car batteries, tires, cleaners, fertilizer and paints. According to the EPA, there are over 300 large quantity generators, and approximately 400 small quantity generators in Kern County.

Hazardous wastes are transported through Kern County by truck and rail. The Department of Transportation has established nine hazardous materials classifications, all of which may be through-transported on Interstate 5. In addition, the County has identified hazardous waste transportation routes, which are subject to certain restrictions. Therefore, transportation of thousands of tons of hazardous waste is made via state highways and County roadways, causing potential danger of spills caused by accidents.

3.8 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.

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.

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.

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.

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.

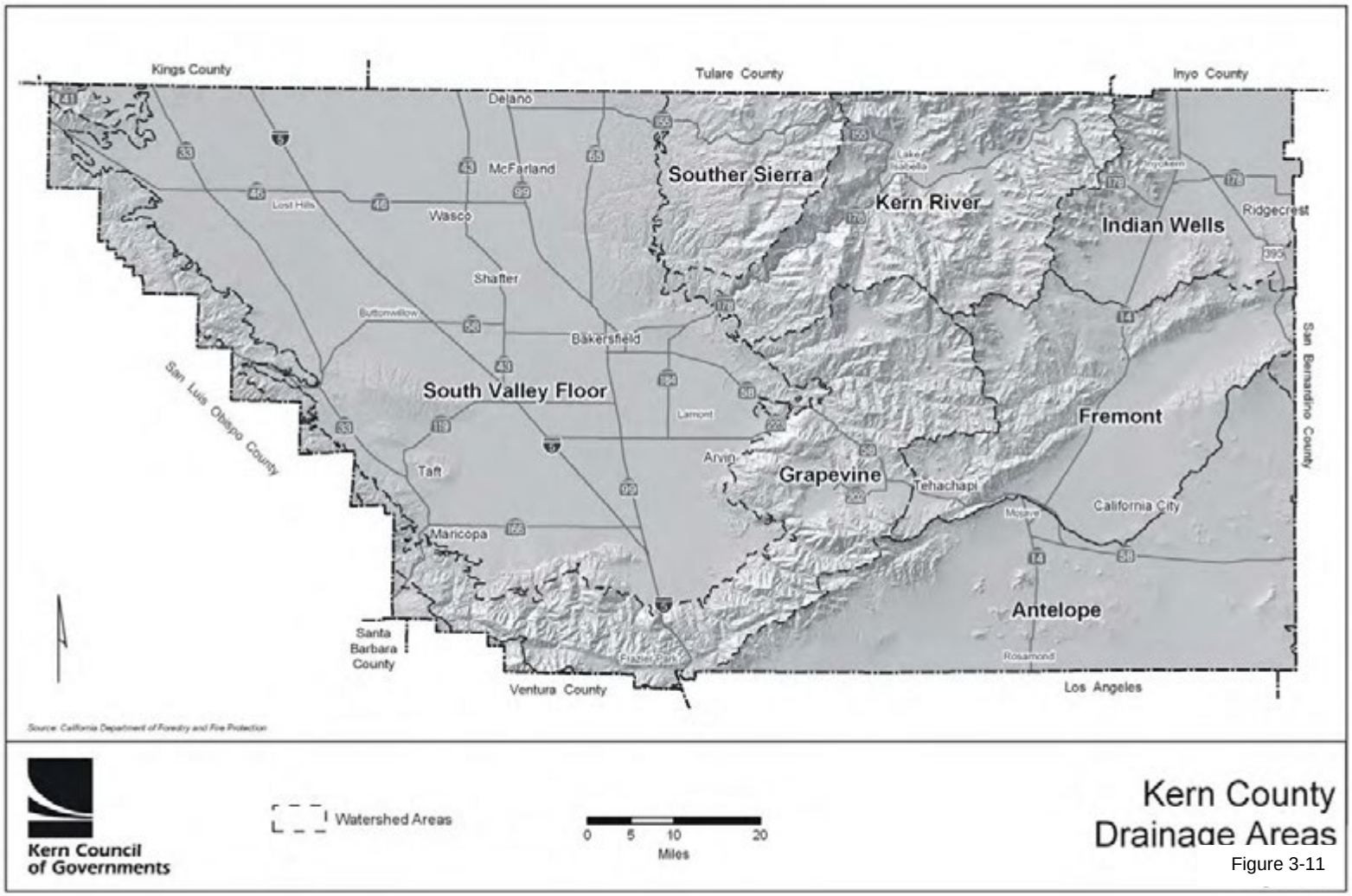

Kings County
Tulare County
Inyo County
Delano
McFarland
Souther Sierra
Kern River
Indian Wells
Ridgecrest
Wasco
Lost Hills
Shafter
Buttonwillow
Bakersfield
San Luis Obispo County
South Valley Floor
Fremont
Lamont
Arvin
Taft
Grapevine
Tehachapi
California City
Maricopa
Antelope
Santa Barbara County
Frazier Park
Rosamond
Ventura County
Los Angeles
San Bernardino County
Source: California Department of Forestry and Fire Protection
Kern Council of Governments
Watershed Areas
0 5 10 20
Miles
Kern County Drainage Areas

Figure 3-11

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 form 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: 3.8.1

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: 3.8.2

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: 3.8.3

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: 3.8.4

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.

3.9 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

- 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.

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.

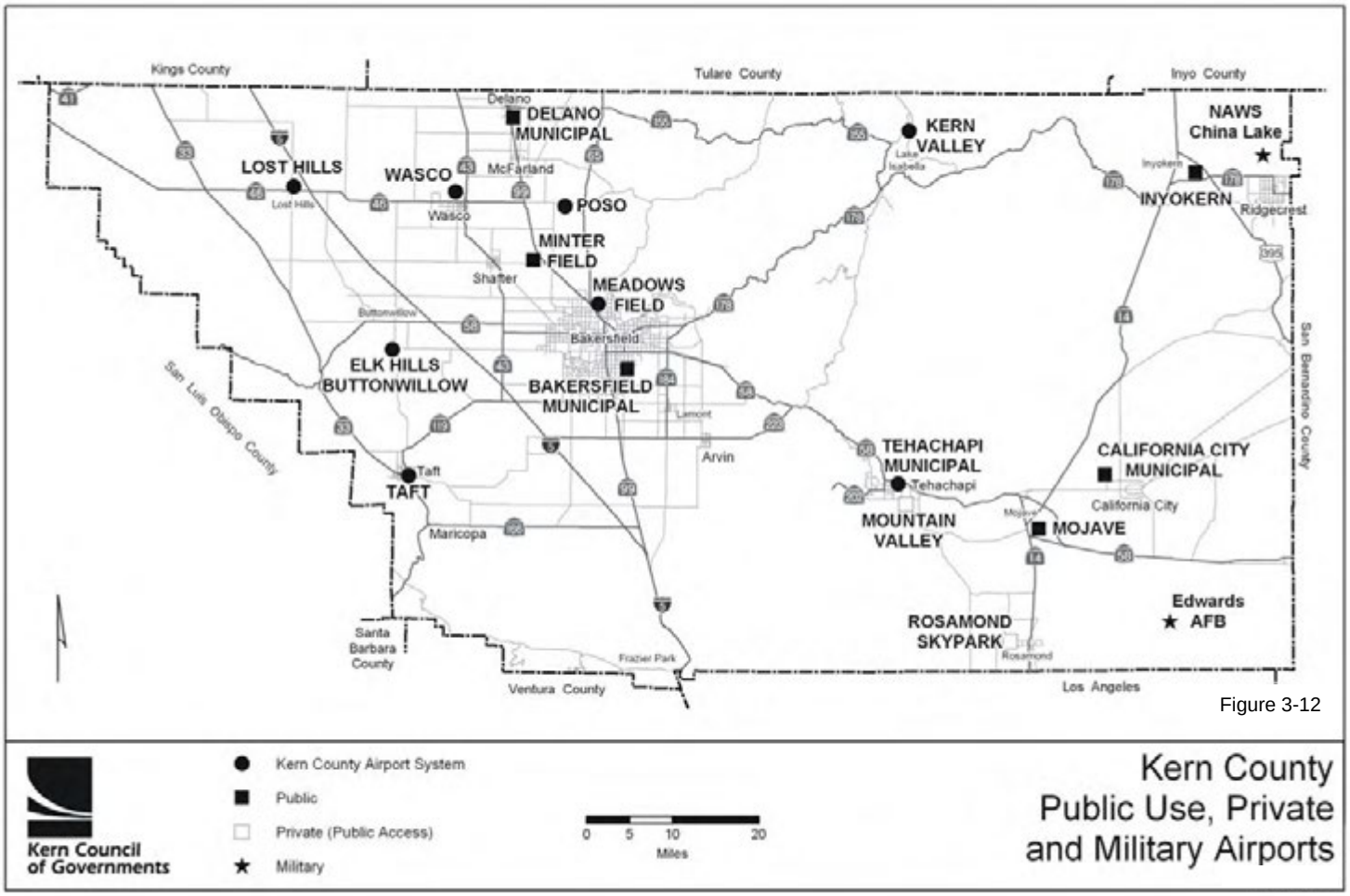

Kings County
Tulare County
Inyo County
San Luis Obispo County
Santa Barbara County
Ventura County
Los Angeles
San Bernardino County
DELANO MUNICIPAL
KERN VALLEY
NAWS China Lake
LOST HILLS
WASCO
McFarland
POSO
INYOKERN
Ridgecrest
MINTER FIELD
Shafter
MEADOWS FIELD
Bakersfield
ELK HILLS BUTTONWILLOW
BAKERSFIELD MUNICIPAL
Lamont
Arvin
TEHACHAPI MUNICIPAL
Tehachapi
CALIFORNIA CITY MUNICIPAL
California City
TAFT
Taft
Maricopa
MOUNTAIN VALLEY
MOJAVE
Edwards AFB
ROSAMOND SKYPARK
Rosamond
Frazier Park
Kern Council of Governments
Kern County Airport System
Public
Private (Public Access)
Military
0 5 10 20
Miles
Kern County
Public Use, Private
and Military Airports

Figure 3-12

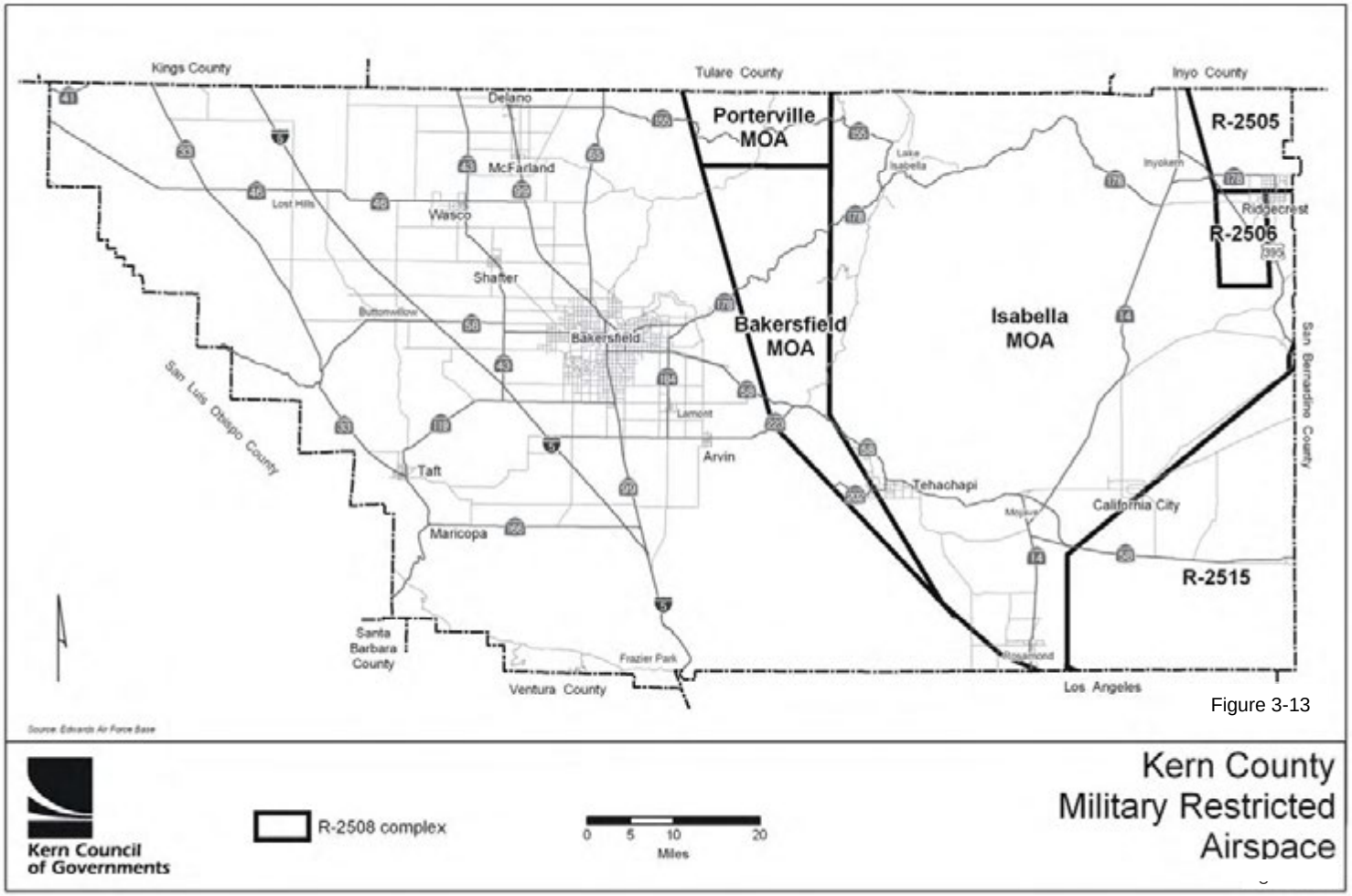

Kings County
Tulare County
Inyo County
Delano
Porterville MOA
R-2505
McFarland
Lake Isabella
Inyokern
Lost Hills
Wasco
Ridgecrest
R-2506
Shafter
Buttonwillow
Bakersfield
Bakersfield MOA
Isabella MOA
San Bernardino County
San Luis Obispo County
Lamont
Arvin
Taft
Tehachapi
California City
Maricopa
R-2515
Santa Barbara County
Frazier Park
Ventura County
Los Angeles
Source: Edwards Air Force Base
Kern Council of Governments
R-2508 complex
0 5 10 20
Miles
Kern County Military Restricted Airspace

Figure 3-13

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 Destination 2030 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 3.9.1

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 Destination 2030 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 2030 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 3.9.2

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 3.9.3

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 3.9.4

Implementation of the projects and programs contained in the Destination 2030 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 3.9.5

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.

3.10 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.

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.

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. Six (6) northbound and six (6) southbound passenger rail operations occur each day on the BNSF lines (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 Destination 2030 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.

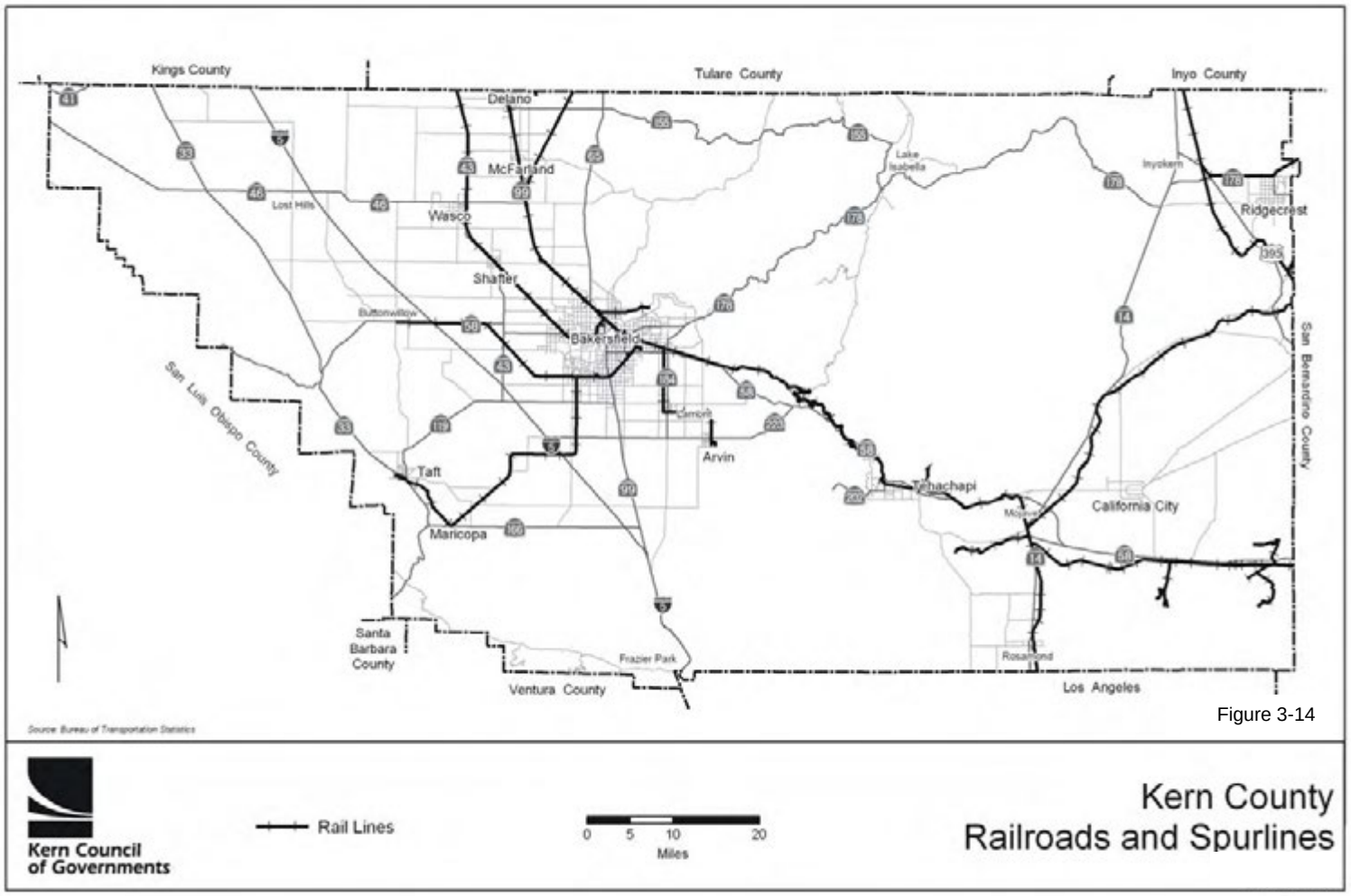
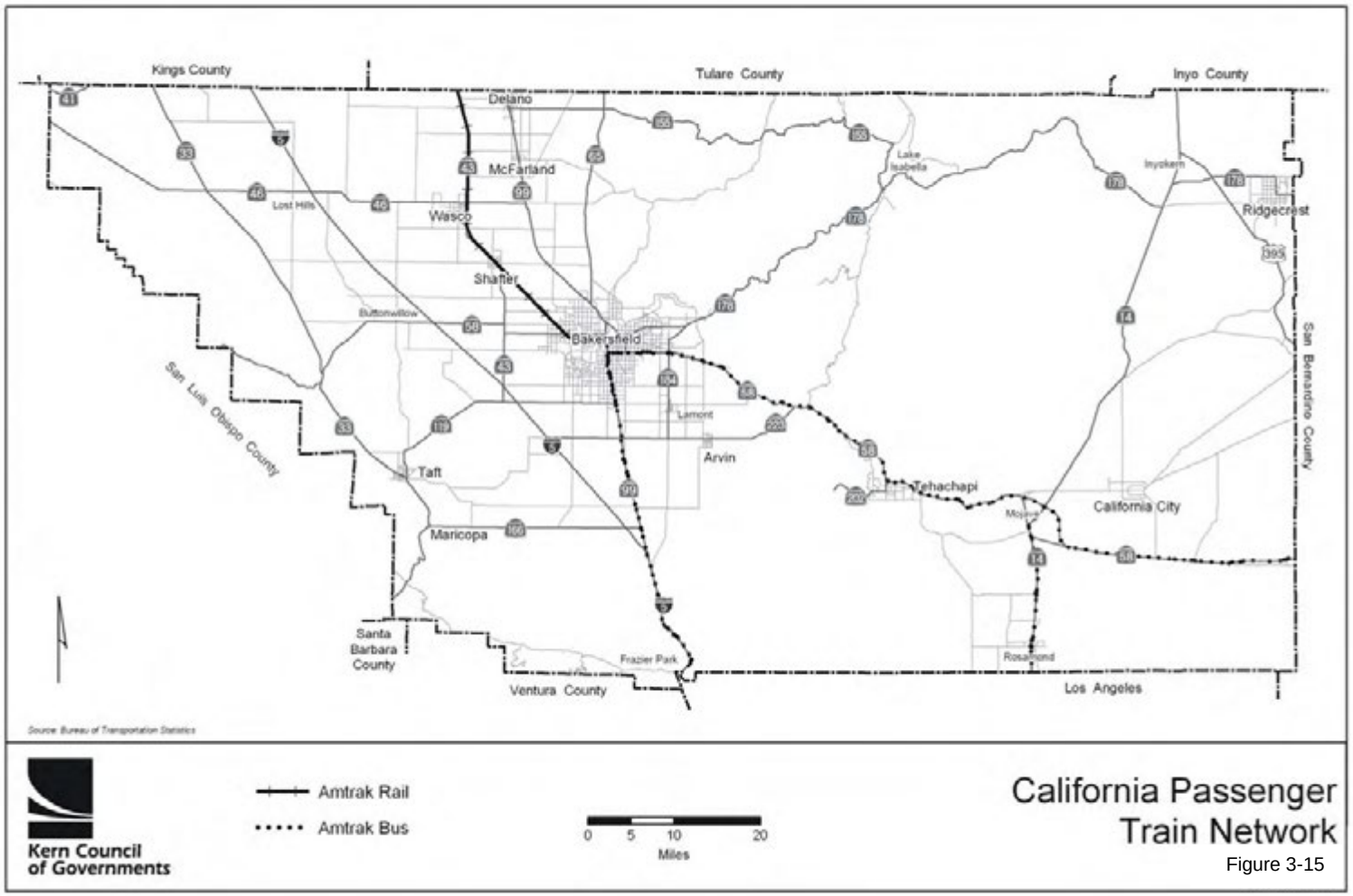

Kings County
Tulare County
Inyo County
Delano
McFarland
Wasco
Lost Hills
Shafter
Buttonwillow
Bakersfield
San Luis Obispo County
Taft
Maricopa
Arvin
Tehachapi
California City
Lake Isabella
Inyokern
Ridgecrest
San Bernardino County
Santa Barbara County
Ventura County
Frazier Park
Rosamond
Los Angeles
Source: Bureau of Transportation Statistics
Kern Council of Governments
Rail Lines
0 5 10 20
Miles
Kern County
Railroads and Spurlines

Figure 3-14


Kings County
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Lamont
Arvin
Taft
Tehachapi
California City
Maricopa
Santa Barbara County
Frazier Park
Ventura County
Los Angeles
Lake Isabella
Inyokern
Ridgecrest
San Bernardino County
Source: Bureau of Transportation Statistics
Amtrak Rail
Amtrak Bus
0 5 10 20
Miles
Kern Council of Governments
California Passenger Train Network

Figure 3-15

- 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 3.10.1

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.

11.0 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.

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 Regional statistical Areas (RSAs) within Kern County are provided in Tables 3-12 and 3-13. Population, housing and employment estimates/projections are provided for Years 2005 and 2030. These estimates/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 442,600 people, an increase of almost 58 percent, between 2005 and 2030. Total population in the Kern region in 2030 is projected to be 1.21 million. Employment is expected to increase by 144,000 jobs or by almost 49 percent.

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.

Table 3-12
2006 and 2030 Kern County Population and Housing Estimates/Projection by Regional Statistical Area (RSA)

RSA 2000	2006 Total Pop.	2006 Hholds.	2030 Total Pop.	2030 Hholds.
Arvin	15,027	3,379	33,700	8,000
Bakersfiled	311,824	102,335	549,100	188,400
Cal City	12,048	3,349	24,900	7,100
Delano	49,359	9,669	84,300	17,100
Maricopa	1,137	403	1,800	580
McFarland	12,538	2,527	21,400	5,100
Ridgecrest	26,515	10,089	36,200	14,600
Shafter	14,501	3,641	34,200	9,800
Taft	9,147	2,276	14,000	3,300
Tehachapi	12,610	2,848	22,800	5,600
Wasco	24,288	4,566	43,600	9,700
Unincorporated	290,875	92,442	342,200	112,420
Metro Bakersfield	497,000	158,500	775,100	255,800
Kern County Total	779,869	237,524	1,208,200	381,700

Source: Kern COG, February 2007

Table 3-13
2005 and 2030 Kern County
Employment Estimates/Projection by Regional Statistical Area (RSA)

RSA 2000	2005 Total Emp.	2030 Total Emp.
00RSA021006	05temp031406	30temp031406
Greater Arvin	3,735	5,667
Greater Cal City/Mojave	7,465	14,893
Greater Delano/McFarland	16,381	24,241
Greater Frazier Park	1,975	5,223
Greater Lake Isabella	3,104	5,721
Greater Ridgecrest	15,802	23,279
Greater Rosamond	23,759	30,378
Greater Shafter	12,363	28,524
Greater Taft/Maricopa	8,287	12,496
Greater Tehachapi	8,069	16,092
Greater Wasco	7,889	12,458
Metro - Central	35,338	40,728
Metro - N.O.R.	42,112	74,511
Metro - Northeast	28,179	34,850
Metro - Southeast	32,787	44,444
Metro - Southwest	47,754	65,496
Metro Total	186,200	260,000
Kern County Total	295,000	439,000

Source: Kern COG, April 2006

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 3.11.1

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, 2006 and 2030, residential population is expected to increase by 55 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 2030 of 1.21 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 3.11.2

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.

3.12 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 service is provided by several carriers, including AT&T, MCI, and Sprint among others. Throughout much of the County, cellular telephone service is provided by Cingular, Nextel, Sprint PCS, T-Mobile and Verizon Wireless and others.

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

- 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

- 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.

- 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.

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 3.12.1

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 23 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 3.12.2

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 3.12.3

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 3.12.4

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.

3.13 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.

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 Destination 2030 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-three (23) 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 effect the regionally system as it evolves over the next twenty-three (23) 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. Two 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. The metropolitan Bakersfield TIF assesses $6,460 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 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. In addition, Kern COG received a $32,500 grant from Caltrans in May 2005 to prepare a transit development plan (TDP) for Kern Regional Transit's Bakersfield – Frazier Park Corridor. The five-year plan is intended to examine local and interregional transit services and find possible alternatives for providing transit more effectively and efficiently.

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 Destination 2030 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 3-14
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 Destination 2030 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 3-15 defines the functional classes in urban areas and Table 3-16 defines functional classes in rural areas.

Table 3-15
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 3-16
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 3-17 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 Destination 2030 RTP.

Table 3-17
Segment Level of Service Definitions (2000 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, 1997

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. In 2004-2005, public transit services carried over 8.1 million passengers in Kern County. Transit services 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 18 fixed routes with a fleet of 80 buses. GET's service area covers 156 square miles and serves approximately 422,000 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 most of the southwest, northwest, Greenacres, and Greenfield.

Table 4-3 in Chapter 4 of the 2030 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.

Transit ridership in Kern County has been slightly decreasing over the past four years as shown in Table 4-4, and GET experienced the highest patronage ever in 2001/02. Largely because of service expansion, transit ridership on Kern Regional Transit increased by almost 70% between 1997 and 2003. In 2006, GET began preparation of a study to analyze possible reasons why transit ridership is falling at the same time gasoline prices are steadily increasing.

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. 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 2030.

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.

Railroad and Goods Movement

The San Joaquin AMTRAK route provides passenger rail service to Oakland and Bakersfield six (6) 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 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.

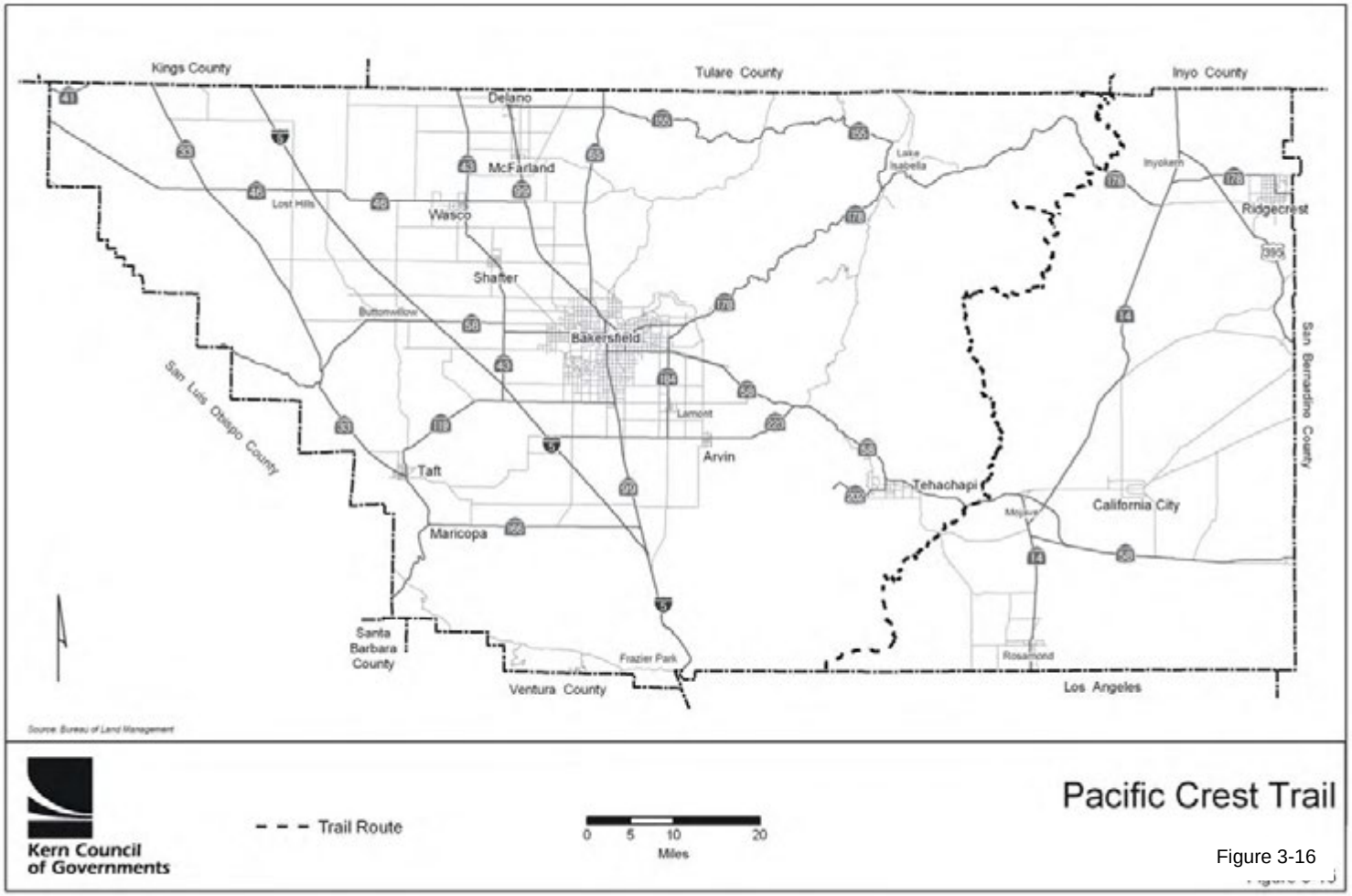

Kings County
Tulare County
Inyo County
Delano
McFarland
Wasco
Lost Hills
Shafter
Buttonwillow
Bakersheld
San Luis Obispo County
Taft
Maricopa
Santa Barbara County
Ventura County
Frazier Park
Lamont
Arvin
Tehachapi
California City
Mojave
Rosamond
Los Angeles
Lake Isabella
Inyokern
Ridgecrest
San Bernardino County
Source: Bureau of Land Management
Kern Council of Governments
Trail Route
0 5 10 20
Miles
Pacific Crest Trail

Figure 3-16

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.

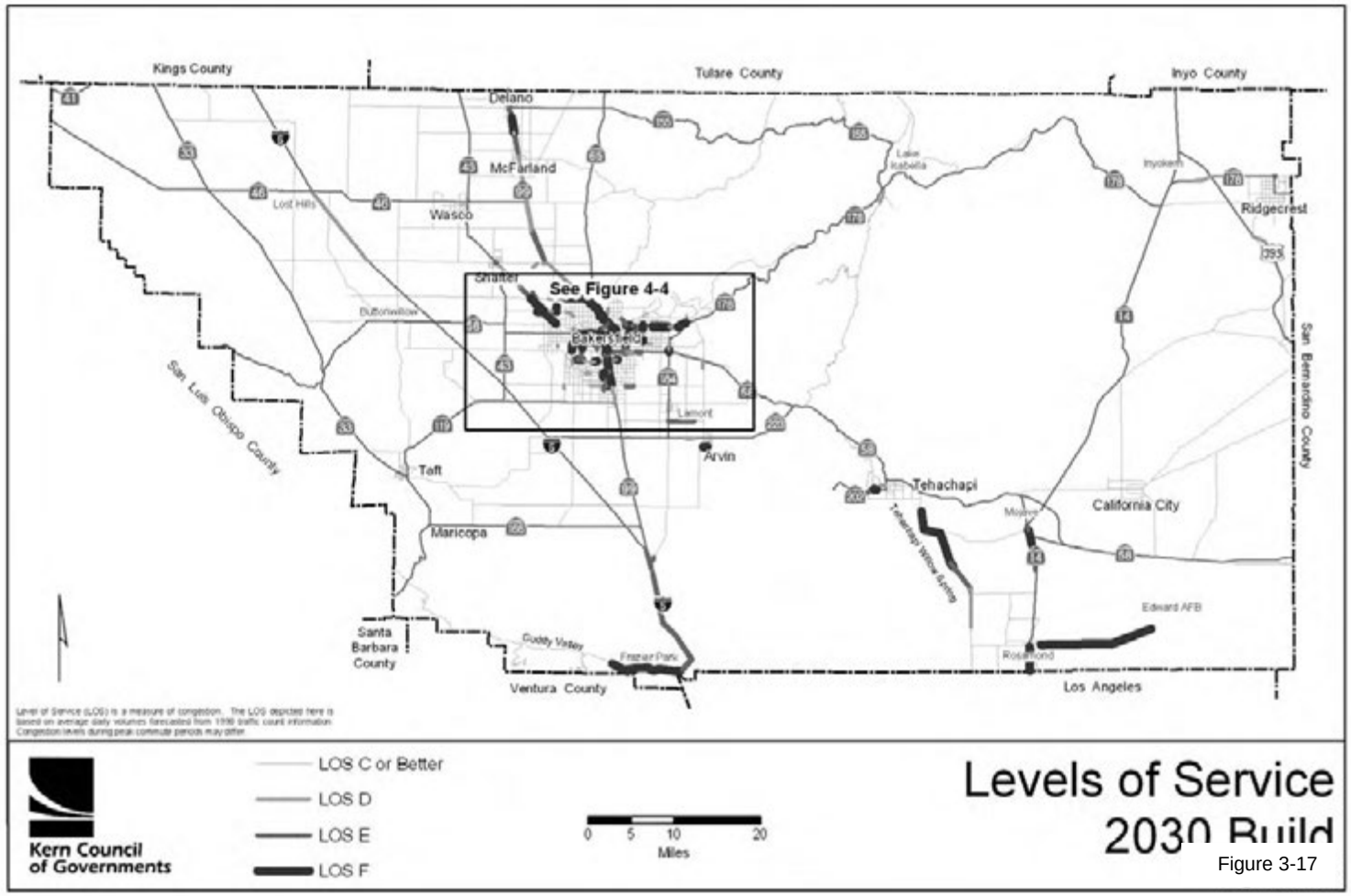
Impact 3.13.1

Kern COG was responsible for preparing existing and future LOS analysis using its Regional Traffic Model. Results of the 2030 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 2010, would be in place. When the improvements associated with the Project (combined with the projects contained in the 2030 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 2004 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.


Kings County
Tulare County
Inyo County
Delano
McFarland
Wasco
Lost Hills
Shafter
See Figure 4-4
Buttonwillow
Bakersfield
Lamont
Arvin
Taft
Maricopa
Tehachapi
California City
Mojave
Ridgecrest
Inyokern
Lake Isabella
Edward AFB
Rosamond
San Luis Obispo County
San Bernardino County
Santa Barbara County
Cuddy Valley
Frazier Park
Ventura County
Los Angeles
Level of Service (LOS) is a measure of congestion. The LOS depicted here is based on average daily volumes forecasted from 1998 traffic count information. Congestion levels during peak commute periods may differ.
Kern Council of Governments
LOS C or Better
LOS D
LOS E
LOS F
0 5 10 20
Miles
Levels of Service
2030 Build
Figure 3-17

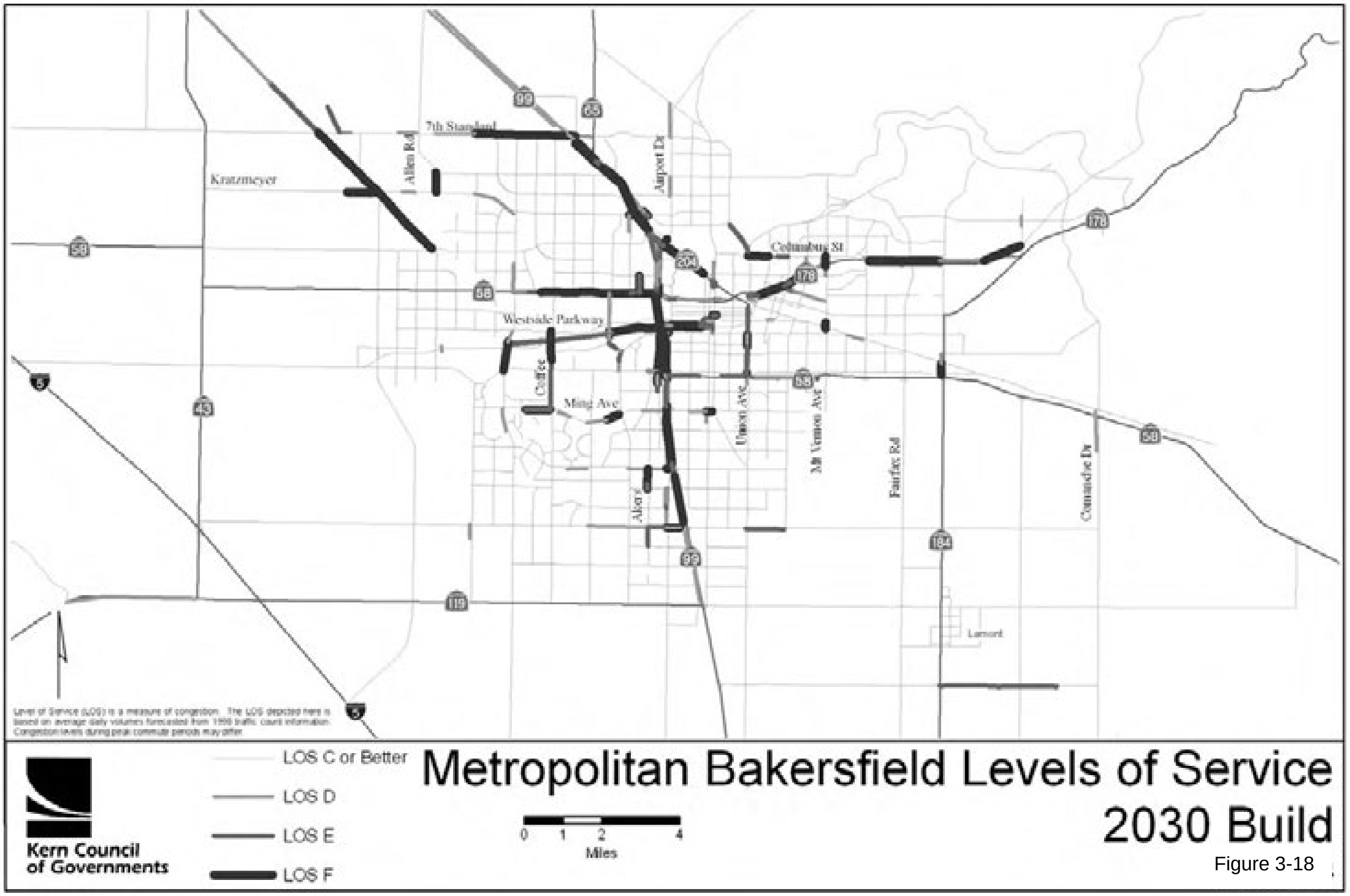
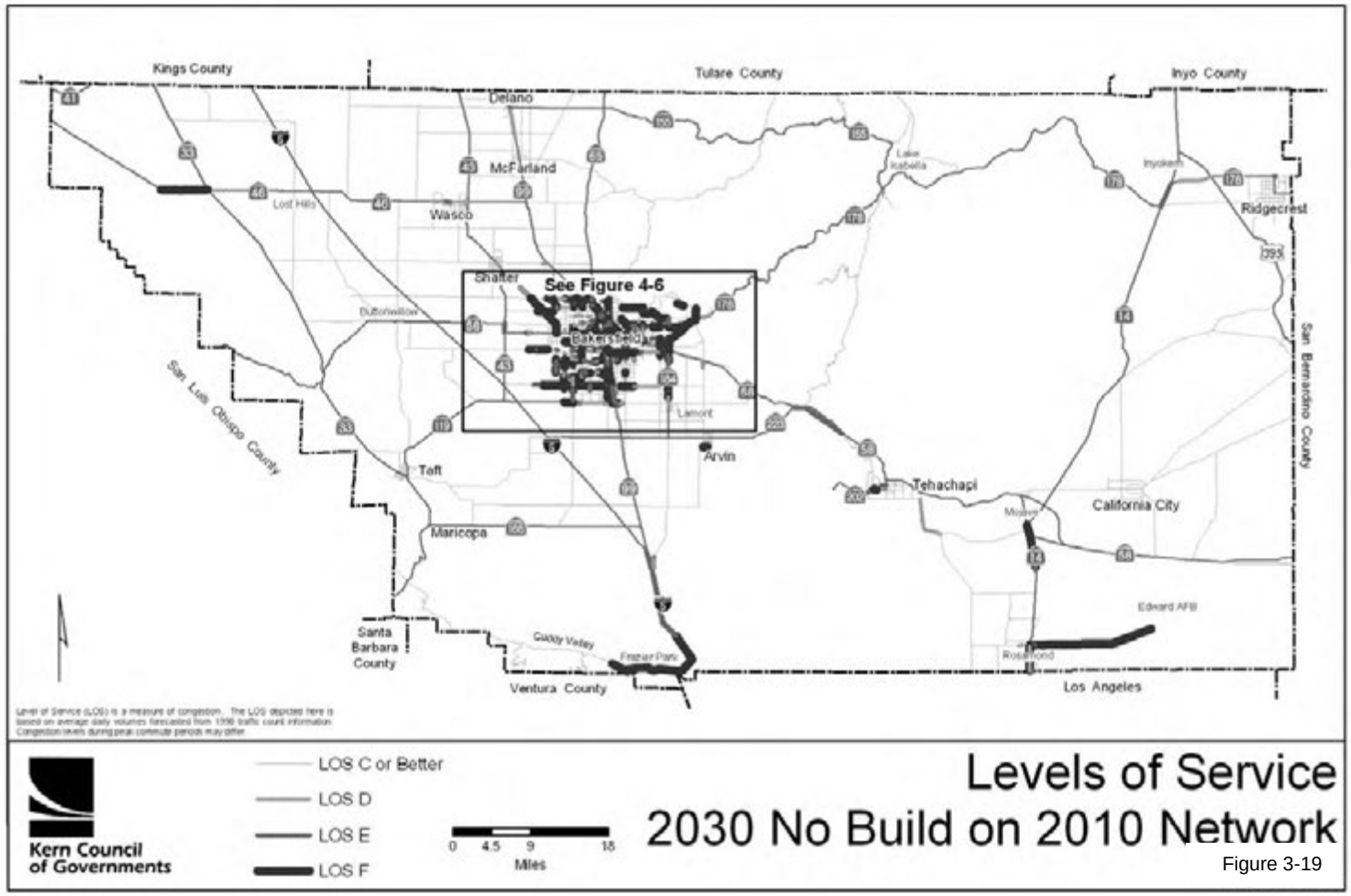

7th Standard
Kratzmeyer
Allen Rd
Airport Dr
Columbus St
Westside Parkway
Coffee
Ming Ave
Union Ave
Mt Vernon Ave
Fairfax Rd
Comanche Dr
Lamont
LOS C or Better
LOS D
LOS E
LOS F
Miles
Kern Council of Governments
Metropolitan Bakersfield Levels of Service
2030 Build

Figure 3-18


Kings County
Tulare County
Inyo County
Delano
McFarland
Wasco
Lost Hills
Shafter
See Figure 4-6
Buttonwillow
Bakersfield
Lamont
Arvin
Taft
Tehachapi
California City
Maricopa
Ridgecrest
Lake Isabella
Inyokern
Mojave
Edwards AFB
Rosamond
San Luis Obispo County
San Bernardino County
Santa Barbara County
Guiddy Valley
Fraizer Park
Ventura County
Los Angeles
Level of Service (LOS) is a measure of congestion. The LOS depicted here is based on average daily volumes forecasted from 1998 traffic count information. Congestion levels during peak commute periods may differ.
Kern Council of Governments
LOS C or Better
LOS D
LOS E
LOS F
0 4.5 9 18
Miles
Levels of Service
2030 No Build on 2010 Network
Figure 3-19

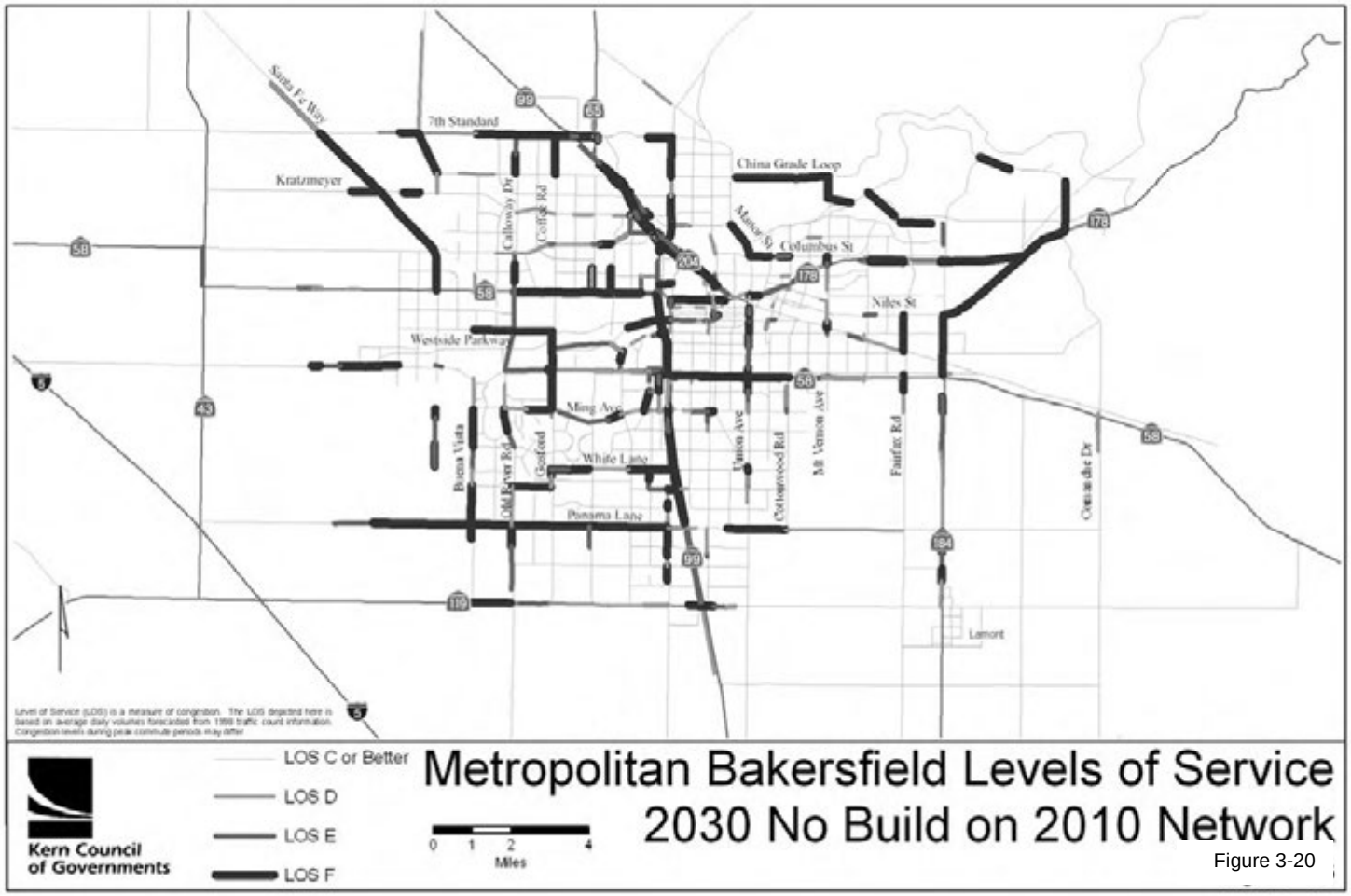

Santa Fe Way
7th Standard
Kratzmeyer
Calloway Dr
Coffee Rd
China Grade Loop
Mohawk St
Columbus St
Niles St
Westside Parkway
Ming Ave
White Lane
Buena Vista
Old River Rd
Gosford
Panama Lane
Union Ave
Cottonwood Rd
Mt Vernon Ave
Fairfax Rd
Oswell St
Lamont
Level of Service (LOS) is a measure of congestion. The LOS depicted here is based on average daily volumes forecasted from 1998 traffic count information. Congestion levels during peak commute periods may differ
Kern Council of Governments
LOS C or Better
LOS D
LOS E
LOS F
0 1 2 4
Miles
Metropolitan Bakersfield Levels of Service
2030 No Build on 2010 Network

Figure 3-20

Mitigation Measures

Measures intended to reduce vehicle miles traveled and reduce congestion are part of the 2030 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 Destination 2030 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 2030 RTP would be expected to reduce congestion levels and improve LOS, however even with this mitigation, the 2030 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 3.13.2

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 3.13.3

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.

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 EIR focuses on an analysis of the Project. Three (3) additional alternatives have been developed in this section of the EIR 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 2030) 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 2030. 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 Destination 2030 RTP were made. This Project Alternative would, however, consider projected (Year 2030) 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 Destination 2030 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 Destination 2030 RTP. This alternative would limit the amount of funding to other forms of transportation or to the limits identified in the Destination 2030 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 Destination 2030 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 2030. 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 Destination 2030 RTP.

  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 Destination 2030 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 Destination 2030 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.

4.3 ENVIRONMENTALLY PREFERRED ALTERNATIVE

Based on the analysis and results described in Section 3, the preferred alternative is the implementation of the Destination 2030 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 Destination 2030 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 3 of this EIR, 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 Destination 2030 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;
- Disturbed and/or loss of 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;
- Conflicts with an adopted HCP, NCCP, or other approved local, regional or state HCP;
- Excavation and earthmoving activities may encounter previously unknown archaeological resources or paleontological materials;
- Increased slope failure;
- Long-term erosion impacts;
- 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;
- Exposure to noise for noise-sensitive land uses in excess of normally acceptable noise levels or substantial increases in noise;
- 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; 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;
- Disturbed and/or loss of 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;
- Conflicts with an adopted HCP, NCCP, or other approved local, regional or state HCP;
- Excavation and earthmoving activities may encounter previously unknown archaeological resources or paleontological materials;
- Increased slope failure;
- Long-term erosion impacts;
- 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;
- Exposure to noise for noise-sensitive land uses in excess of normally acceptable noise levels or substantial increases in noise;
- 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; 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 5% regardless of the Project. The region's population will grow from approximately 779,900 people to approximately 1.21 million by 2030 (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:

- 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;
- Disturbed and/or loss of 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;
- Conflicts with an adopted HCP, NCCP, or other approved local, regional or state HCP;
- Excavation and earthmoving activities may encounter previously unknown archaeological resources or paleontological materials;
- Increased slope failure;
- Long-term erosion impacts;
- 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;
- Exposure to noise for noise-sensitive land uses in excess of normally acceptable noise levels or substantial increases in noise;
- 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; 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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Amanda Duchardt, Senior Associate

6.2 ORGANIZATIONS AND AGENCIES REFERENCED OR CONSULTED

The following provides a list of organizations and agencies referenced or consulted during preparation of this EIR.

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 State 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 State Department of Housing and Urban Development
United States Environmental Protection Agency
United States Fish and Wildlife Service
United States Geological Survey
VRPA Technologies, Inc.

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 – Environmental Impact Report (EIR) for the 2007 Revision of the Destination 2030 Regional Transportation Plan

Kern Council of Governments (Kern COG) will be the Lead Agency and will prepare an Environmental Impact Report (EIR) 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 EIR 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 2007 revision of the Destination 2030 Regional Transportation Plan

Location: Kern County, California

Description: The Destination 2030 Regional Transportation Plan (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.

The RTP is a policy guide for the Kern Council of Governments (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: _____

Signature: _____
Ronald E. Brummett, Executive Director
Phone: 661-861-2191

Kern Council of Governments
DESTINATION 2030 REGIONAL TRANSPORTATION PLAN

Project Description

The project, as defined by CEQA Statutes, Section 21065, is the preparation of the 2007 revision of the Destination 2030 Regional Transportation Plan (RTP). 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. The California Transportation Commission has prepared guidelines (most recently revised in October 2003) 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 three (3) years. The last comprehensive EIR on the RTP was completed in June 2006, which addressed transportation improvement projects, programs, and funding reflected in the 2004 RTP together with additional funding from the proposed ½ Cent Sales Tax Measure (Measure I). The proposed Measure did not receive the 2/3^{rds} voter approval it required in order to pass in the November 2006 election. The 2007 revision to the Destination 2030 RTP must be prepared to address possible environmental impacts resulting from its implementation sources of funding that are available for programming.

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 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 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.

Specific environmental issues to be addressed in the EIR 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; and
- Transportation/Traffic.
- 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.

APPENDIX B – NOTICE OF PREPARATION COMMENTS RECEIVED

Comment Letters were not received by Kern COG

FINAL Environmental Impact Report

State Clearing House No.
2006111119

Kern COG 2007 Destination 2030 Regional Transportation Plan

May 2007

Final Program Environmental Impact Report
for the
Kern COG 2007
Destination 2030 Regional Transportation Plan

May 2007

Prepared For:

Kern Council of Governments
1401 19th St., Suite 300
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Ph: (661) 861-2191 Fax: (661) 324.8215

Prepared By:

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Ph: (559) 271-1200 Fax: (559) 271-1269

TABLE OF CONTENTS

1.0 INTRODUCTION

The California Environmental Quality Act (CEQA) requires that a Final Environmental Impact Report (FEIR) must be prepared, certified, and considered by decision-makers prior to taking action on a project. The Final EIR provides the local agency with 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 that document. This Final EIR, therefore, represents the culmination of all environmentally related issues raised during the comment period on the Draft EIR for the Kern COG 2007 Revision to the Destination 2030 Regional Transportation Plan (RTP). In addition, this Final EIR 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 EIR are implemented. Finally, the FEIR contains the Statement of Overriding Considerations, which identifies the significant, adverse, and unavoidable impacts in the Draft EIR. The Kern COG Board of Directors is required to balance the benefits of the proposed Project (Revision to the Destination 2030 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 EIR review and comment period began on March 5, 2007 and ended on April 18, 2007. Comments received and staff responses to those comments are contained in Section 2 of this Final EIR. Section 3 provides a listing of changes, additions, and corrections to the Draft EIR recommended by VRPA. Such changes, additions, and corrections are necessary to address revisions resulting from written comments on the Draft EIR. In addition, this document also includes the Mitigation Monitoring and Reporting Program (reference Section 4) and the Statement of Overriding Considerations (reference Section 5).

The Final EIR is composed of the following documents:

- Kern COG 2007 Revision to the Destination 2030 Regional Transportation Plan, Draft Environmental Impact Report, March 1, 2007;
- Kern COG 2007 Revision to the Destination 2030 Regional Transportation Plan, March 6, 2007; and
- Kern COG 2007 Revision to the Destination 2030 Regional Transportation Plan, Final Environmental Impact Report, May 17, 2007.

1.2 PROJECT DESCRIPTION

The project, as defined by CEQA Statutes, Section 21065, is the preparation of the 2007 revision of the Destination 2030 Regional Transportation Plan (RTP). 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. The California Transportation Commission has prepared guidelines (most recently revised in October 2003) 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 (beginning with SAFETEA-LU) to update the Regional Transportation Plan every four (4) years. The last comprehensive EIR on the RTP was completed in June 2006, which addressed transportation improvement

projects, programs, and funding reflected in the 2004 RTP together with additional funding from the proposed ½ Cent Sales Tax Measure (Measure I). The proposed Measure did not receive the 2/3rds voter approval it required in order to pass in the November 2006 election. The 2007 revision to the Destination 2030 RTP must be prepared to address possible environmental impacts resulting from its implementation sources of funding that are available for programming.

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 Destination 2030 RTP consists of required elements and is organized into various chapters. A description of each Chapter for the RTP follows.

- **Chapter 1.** Executive Summary;
- **Chapter 2.** Transportation Planning Policies;
- **Chapter 3.** Planning Assumptions;
- **Chapter 4.** Strategic Planning Investments;
- **Chapter 5.** Financing Transportation;
- **Chapter 6.** Environmental Justice;
- **Chapter 7.** Future Links;
- **Chapter 8.** Monitoring Progress;
- **Chapter 9.** References; and
- **Appendices.**

2.0 WRITTEN COMMENTS AND FINAL RESPONSES TO COMMENTS

(*Comments received are provided beginning on Page 2-21)*

FROM: Edmund G. Brown, Jr., Attorney General, State of California, Department of Justice.

DATED: April 18, 2007

RESPONSE #1: Comments related to this topic refer to the recent passage of California Assembly Bill (AB) 32, or the Global Warming Solutions Act of 2006, which was signed and passed into law by Governor Arnold Schwarzenegger on September 27, 2006. The Act codifies California's atmospheric greenhouse gas (GHG), which is composed of carbon dioxide (CO_2), methane, nitrous oxide (NO_X), hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. The Act establishes GHG emissions targets by requiring that the State's global warming emissions be reduced to 1990 levels by 2020. The Act also directs the California Air Resources Board (CARB) to enforce the statewide cap and would initiate the first phase of program requirements in 2012. The Act makes no mention of local governments or how cities and counties may be affected by future regulations. The regulations developed by CARB in response to the Act will address point sources of greenhouse gas emissions.

Other legislation (AB 1493) requires that CARB develop and adopt the nation's first GHG emission standards for automobiles. These standards are not yet established and are not available as a tool in our GHG modeling process. AB 1493 states that global warming is a matter of increasing concern for the public health and environment in California. It cites several risks that California faces from climate change, including reductions in the State's water supply, increased air pollution caused by higher temperatures, harm to agriculture, an increase in wildfires, damage to the coastline, and economic losses caused by higher food costs, water and energy costs, and insurance prices. The California legislature believes that technological solutions to reduce GHG emissions would stimulate California's economy and provide jobs.

The Global Warming Solutions Act has three main parts: (1) emissions reporting requirements, (2) adoption of enforceable emission limits, and (3) development of the State scoping plan.

- Emissions Reporting: CARB is required to adopt regulations for reporting and verification of emissions by January 1, 2008. Under the Act, any entity that has voluntarily participated in the emissions reporting program of the California Climate Action Registry by December 31, 2006, will be grandfathered under that program and will not be required to "significantly alter" its program when new or different requirements are later adopted by CARB. In addition, companies will receive "early action" credit for their efforts after specific emission reduction regulations are implemented.

- Enforceable Emissions Limits: By January 1, 2008, CARB is required to determine what California's statewide greenhouse gas emission level was in 1990, and to approve that level as the statewide limit that will be achieved by 2020. While the bill does not specify the 1990 level, lawmakers supporting the bill have claimed that this will result in a 25% reduction from current emissions. Before these levels are set, the Board must hold at least one public workshop and provide an "opportunity for all interested parties to comment."

  With respect to individual sources, by June 30, 2007, CARB will publish a list of discrete "early action" greenhouse gas emission reduction measures that can be implemented within the next three years. Formal regulations adopting those early action measures must be promulgated by January 1, 2010, and must be enforceable as of that date. All of the Regional Transportation Plans (RTPs) in the San Joaquin Valley must be prepared and adopted by May 31, 2007, considering federal deadlines

established by the Federal Highway Administration (FHWA). FHWA's deadlines were made in consultation with CARB and the U.S. Environmental Protection Agency (EPA). As a result, the ability to incorporate "early action" GHG reduction measures in the current RTP Update process is not possible.

- Development of the State Plan: Following the initial publication of the early action measures, the Act directs CARB to develop a "scoping plan" by January 1, 2009, to achieve the maximum technologically feasible and cost-effective reductions in greenhouse gas emissions from specific sources or categories of sources by 2020. To develop the plan, CARB must consult with agencies with authority over greenhouse gas emissions (including the California Public Utilities Commission (PUC) and California Energy Commission (CEC), conduct public workshops, and consider economic and non-economic costs and benefits of any proposed programs. In addition, CARB must convene both an Environmental Justice Advisory Committee and an Economic and Technology Advancement Advisory Committee to assist in the development and implementation of the plan. The Economic and Technology Advancement Committee will be dedicated to identifying investment and funding opportunities for research and development of technologies that will help reduce greenhouse gases.

  The Act describes numerous other factors that must be considered in the development of the scoping plan, including national and international practices for greenhouse gas emissions reduction, effectiveness of voluntary reduction practices, relative emission contributions of various sources, and potential effects on small businesses.

After the scoping plan is published, CARB is directed to implement the identified emissions reduction measures through formal regulation before January 1, 2011; the regulations will go into effect one year later. Like the provision describing the various issues that must be considered in development of the scoping plan, the emissions reduction regulations must also consider a list of potential impacts on California's economy and the public health. Notably, the act permits the 2011 regulations to include market-based declining annual aggregate emissions limits beginning in 2012. In other words, CARB is authorized to create a regulatory mechanism for a cap-and-trade program. Any market-based program must be designed not to increase emissions of criteria air pollutants and must consider localized and cumulative emissions impacts.

In response to industry's concern about the inflexibility of the reduction to 1990 levels, the Act includes an economic "safety valve," which allows the Governor to suspend the emission reduction measures for one year in the event of "extraordinary circumstances, catastrophic events or the threat of extreme economic disruption." The Act also explicitly states that the authority of the California PUC is not affected by the Act.

In summary, the Act will create a new regulatory program intended to reduce statewide greenhouse gas emissions to their 1990 level. It is not yet clear how, or if, these future regulations would affect local governments or how they might influence local land use planning decisions. From the background discussion above, it is clear that the issue of greenhouse gas reductions extends well beyond the scope of regional government actions incorporated in RTPs without the development of tools to assess GHG emissions, which will come at a later date. Nevertheless, Kern COG recognizes the importance of this issue. Goals and policies already incorporated into the RTP will serve to reduce vehicle trip generation. 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 (CO2), according to the CEC, and is responsible for approximately 2% of the world's CO2 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 the natural environment in California 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; and
- 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.

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. 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.

Similar changes would also occur in other parts of the world with regional variations in resources affected and vulnerability to adverse effects. According to the CEC, GHG emissions in California are attributable to human activities associated with industrial/manufacturing, utilities, transportation, residential, and agricultural sectors, as well as natural processes. Transportation is responsible for 41% of the state's GHG emissions, followed by the industrial sector (23%), electricity generation (20%), agriculture and forestry (8%) and other sources (8%). Emissions of carbon dioxide (CO_2) 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 CO_2 include uptake by vegetation and dissolution into the ocean.

Determining what the contribution of GHG emissions might be resulting from the Project is infeasible given the inability to specifically calculate emissions consistent with an accepted methodology. However, Kern

COG has compared the Project CO_2 emissions to emissions that would result from the No Project Alternative. The No Project Alternative reflects the existing or currently adopted 2004 RTP. The results of the comparison between the Project and the No Project Alternative are presented in Tables 1 and 2 below Table 1 provides emission estimates for CO_2 using the California Mobile Source Emission Inventory (Emission Factors) model or EMFAC. The results indicate that CO_2 emissions resulting from the Project will be the same as emissions expected from the No Project Alternative. Table 2 provides results from the RTP Air Quality Conformity Analysis prepared for the Project (reference Table 2 below and included as Table 3-8 in the Draft EIR), for criteria pollutants including NO_X. The results indicate that emissions will be reduced between 2008 and 2030 as RTP projects are constructed.

Table 1

Future CO_2 Emissions (Tons Per Day)

Scenarios	CO_2
Project Alternative (2030)	22.00
No Project Alternative (2030)	22.00
Difference	0.00
% Change	0.00%

Table 2

Conformity Results for RTP Projects
EMFAC Results Summary -- KERN (SJV)

Pollutant	Scenario	Emissions Total (tons/day)	DID YOU PASS?	
		CO	CO	
	2010 Budget	180		
			2008 Budget	2010 Budget
Carbon Monoxide	2010	**112.93**	**YES**	**YES**
	2018 Budget	180		
	2018	**68.3**		
	2020	**57.2**	**YES**	**YES**
	2030	**41.58**	**YES**	**YES**
		ROG **NOx**	**ROG**	**NOx**
	2008 Budget	11.5 32.7		
	2008	**11.5** **32.6**	**YES**	**YES**
Ozone	2010 Budget	9.6 27.2		
	2010	**9.6** **27.0**	**YES**	**YES**
	2013	**7.9** **20.6**	**YES**	**YES**
	2020	**5.6** **11.3**	**YES**	**YES**
	2030	**4.2** **7.2**	**YES**	**YES**

Conformity Results for RTP Projects
EMFAC Results Summary -- KERN (Mojave Desert)

Pollutant	Scenario	Emissions Total (tons/day)		DID YOU PASS?	
		ROG	**NOx**	**ROG**	**NOx**
	2005 Budget	3.9	7.1		
	2009	**2.4**	**4.8**	**YES**	**YES**
Ozone					
	2015 Budget	2.1	4.0		
	2015	1.6	3.0	**YES**	**YES**
	2020	1.2	2.2	**YES**	**YES**
	2030	**1.0**	**1.5**	**YES**	**YES**

RESPONSE #2: Comment noted. The comment reiterates CEQA requirements for an EIR. The RTP EIR prepared by Kern COG was prepared in accordance with CEQA requirements; however, an analysis of global warming or GHG emissions was not incorporated into the Draft EIR for a two reasons. First, the Attorney General's Office did not submit a comment letter to Kern COG during its review of the EIR Notice of Preparation (NOP), which was provided to the State Clearinghouse on November 22, 2006. A letter from CARB was also not received. The Attorney General's Office and CARB had the opportunity to submit comments on the NOP, which is the scoping document for the Draft EIR. Second, the Act requires that CARB develop guidelines, an emissions inventory, thresholds of significance, and a methodology to calculate GHG emissions. Without the availability of those documents and tools, Kern COG did not believe it was possible to evaluate the potential impact of global warming. In response to the comment, Kern COG has estimated GHG emissions (CO_2), with the only analytical tools available to it (EMFAC), which indicates that the Project will generate lower emissions than the No Project Alternative (reference Table 1 above). Conformity results referenced in Table 2 above also indicate that criteria pollutants will lessen as the projects are implemented over time or between 2008 and 2030.

RESPONSE #3: Comment noted. The comment describes the purpose and components of an RTP. The RTP EIR prepared by Kern COG was prepared in accordance with RTP requirements related to environmental protection and enhancement of the environment. An analysis of global warming or GHG emissions was not incorporated into the RTP because the Act requires that CARB develop guidelines, an emissions inventory, thresholds of significance, and a methodology to calculate GHG emissions. Without the availability of those documents and tools, Kern COG did not believe it was possible to evaluate the potential impact of global warming. In response to the comment, Kern COG has estimated GHG emissions (CO_2), which indicates that the Project will generate lower emissions than the No Project Alternative (reference Table 1 above). Conformity results referenced in Table 2 also indicate that criteria pollutants will lessen as the projects are implemented over time or between 2008 and 2030.

RESPONSE #4: 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 2007 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 2007 RTP is designed to complement, rather than change, the plans adopted by the local agencies. Thus, the ultimate effect of the 2007 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 noted, the Plan does include $1.7 billion for the provision of a "multi-modal" system. The RTP includes discussions of several major transit and land use studies that will aid Kern COG in allocating future funding to the multi-modal transportation system including the following:

- Kern County Coordinated Human Services Transportation Plan represents collaboration between the Kern COG, local and regional transit agencies and a diverse group of human service providers located throughout the County. It will include an analysis of existing conditions, an assessment of transportation needs in Kern County, and examination of potential solutions to improve transportation services, including barriers to implementation and opportunities to overcome them, especially through increased coordination between transportation and human service providers. The overarching goal of this planning effort is to respond to the requirements of SAFETEA-LU for the completion of a locally developed, coordinated public transit-human services transportation plan. Additionally, a goal for this plan is to provide an opportunity for a diverse range of stakeholders with a common interest in human service transportation to convene and collaborate on how best to provide transportation services for these targeted populations. Specifically, the stakeholders are called upon to identify service gaps

and/or barriers, strategize on solutions most appropriate to meet these needs based on local circumstances, and prioritize these needs for inclusion in the plan.

- 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.

- Major Transportation Investment Study

  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 COG;
  - 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 $5,200 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 would require future study should funding 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, 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.

- Proposed 2007 RTP Public Transit Actions

  - Near-Term, 2007-2010

    - 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, and
- Determine appropriate locations for park-and-ride lots; construct as funding becomes available.

➢ Long-Term, 2011-2030

- 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, and
- Determine appropriate locations for park-and-ride lots; construct as funding becomes available.

♦ Proposed 2007 Land Use Principles - A New Vision

In response to the challenge of building and maintaining a transportation network that works, many professionals have proposed a variety of alternative land use designs to more effectively reduce urban sprawl, make more efficient use of transportation and infrastructure systems, and enhance the livability of Kern's communities. These visions have been given different names, such as new urbanism, transit-oriented development, traditional neighborhood development; whatever the name, they share the common goal of making communities more environmentally sound and accessible within today's financial, physical and environmental limits.

How to apply this vision differs amongst stakeholders. Elected officials and planners should tailor programs to the character and context of their individual communities. The goal should be to develop a comprehensive strategy that includes a range of mutually supportive actions.

One of the best statements of this new vision was developed by a number of designers, activists and local government officials as the "Ahwahnee Principles," which established a set of community, regional and implementation approaches for creating more livable communities. These principles call for leaders to:

- Plan for complete communities that integrate housing, jobs, shopping, recreation, and civic uses essential to the daily life of residents;
- Size and arrange communities so that jobs, housing and other uses are within walking distance of transit stops and of each other;
- Create a well-connected circulation system that provides direct and interesting paths for pedestrians and bicyclists and organize land uses so that they can be well-served by transit;
- Provide a community center and an ample supply of squares, greens and parks;
- Establish a well-defined edge for the community through permanent open space and incorporate existing natural areas into the community's design;
- Organize the regional network of urban places around a regional system of transit rather than freeways;
- Locate regional institutions and services within major urban centers; and
- Take charge of planning these communities to avoid piecemeal development and encourage infill and redevelopment.

Overall, these principles are designed to help communities become more livable and environmentally sustainable.

➢ Near Term Actions 2007-2010

- 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;
- Track progress on the MTIS Land Use strategy in metropolitan Bakersfield in the MTIS annual report;
- 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 2011-2030

- 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 commuter 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.

♦ Land Use/Transportation Nexus:Transportation Planning Priorities:A Hierarchy for Land Use Decisions

The transportation planning discipline encompasses many separate planning arenas, differentiated by modes of transport, each with independent infrastructure funding streams. Coordinating these funding streams can be difficult; coordinating the planning for these transportation arenas is just as difficult.

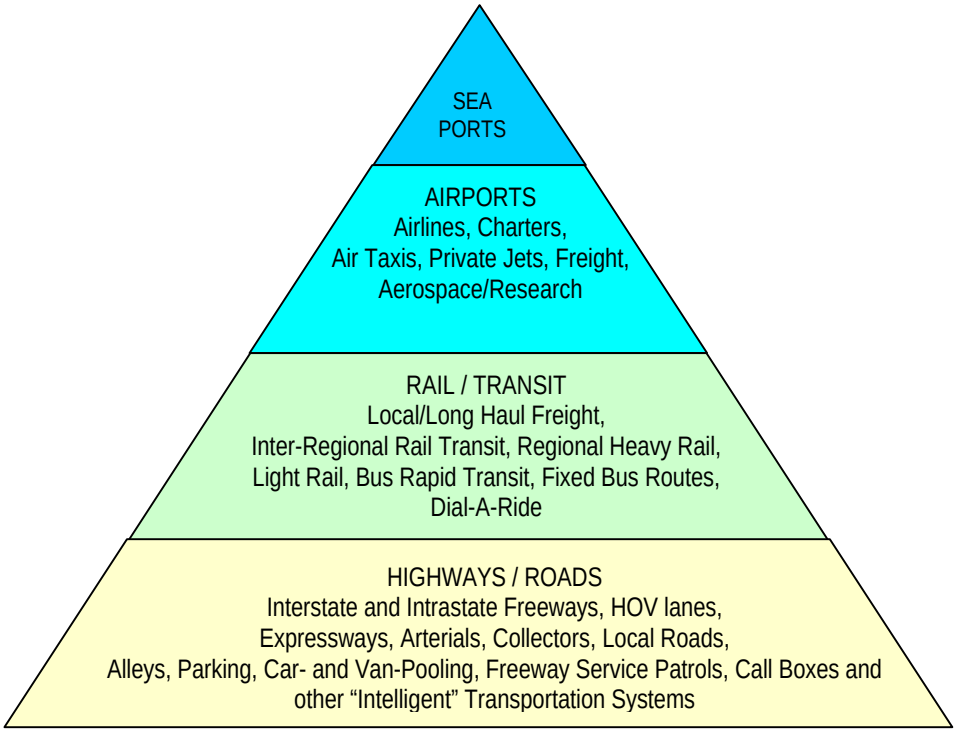
Recent federal transportation spending bills have made it a goal for regions to better coordinate transportation between all modes. This discussion provides a framework for intermodal coordination of land uses.

To rank the importance of land use decisions for transportation-related infrastructure one can consider the number of Site Opportunities for locating a mode's infrastructure and land use. For example, while seaports have a limited number of site opportunities, roads can be engineered and placed almost anywhere. Having more site opportunities than seaports, airports must be carefully placed to avoid conflicts with existing and future residential areas. Rail, transit and highways have a larger number of site opportunities for their infrastructure, however locations to provide intermodal connectivity between seaports, airports and rail are more limited. This land use prioritization and connectivity discussion will cover seaports, rail/freight, airports, transit, followed by highways and roads.

Transit has one the strongest linkages to land use. The viability of transit is closely linked to the density and intensity of land uses within a region. Before World War II land uses in most communities and neighborhoods were focused on walk-ability and streetcar transport. Most communities in the Kern region have an urban core based on these concepts. The Southern Pacific passenger train station on Baker Street in Old Towne Kern, East Bakersfield, was connected to the Santa Fe train station in downtown Bakersfield on F Street by an electric trolley along 19th Street from 1901 to 1942. The suburban explosion since the war has spawned a low-density development pattern that results in heavily subsidized and underused buses traveling our city streets.

Figure 1

Hierarchy for Transportation Planning Sub-disciplines in Land Use Decisions

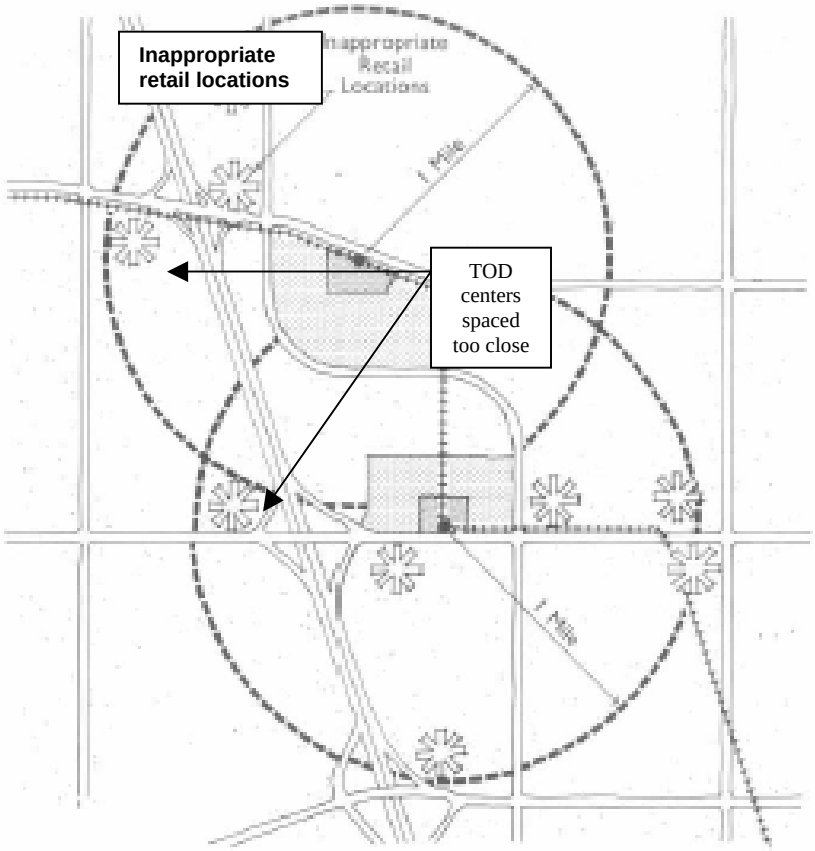


The Kern region is at a distinct disadvantage compared to other regions that have more successful transit systems. The Kern region lacks confining barriers to urban growth such as shorelines and mountain ranges that channel development along a narrow corridor of flat land and keep development from sprawling in all directions. Lacking these constraints, developing a choice of housing with access to sustainable and viable transit alternatives is a challenge.

As Metropolitan Bakersfield has grown, it has loosely developed around new centers. Some of these centers have surrounded a 3-mile wide low-density oil production and refining complex adjacent the North side of the Kern River. No North-South connections currently cross the river through this heavily industrial area. This results in poor transit service from the rapidly growing Northwest area to the rest of metropolitan area. The ring of centers includes Downtown/Westchester, California Avenue, The Market Place/CSUB, The Rosedale Promenade, and Rosedale Hwy/99. Each of these centers sprawls over large areas that often lack a central focus point or pedestrian pocket for concentrating urban transit access. Beyond this ring of centers new centers are sprawling out to the South and Southwest (Valley Plaza, Panama/99, White/Gosford) and to the Northwest (Baker Street, Bakersfield College, East Hills Mall). According to guidelines developed by Peter Calthorpe for transit oriented development, these transit centers should be spaced a minimum of one mile apart with the majority of population activity within a quarter mile--ten minute walking radius. New developments on the periphery need to properly space these activity centers to promote transit usage.

Figure 2

Proximity of Competing Retail



Source: Calthorpe, Peter. The Next American Metropolis; Design Guidelines p. 82

Phased Transit Oriented Development (TOD) - In 1994, Kern COG completed the Major Transportation Investment Study (MTIS) that analyzed transit alternatives including a light-rail option. The study indicated that along the densest corridor linking Bakersfield College to Cal State Bakersfield, a light rail route would carry less than half of the rider-ship needed by 2015 to be economically feasible. The recommendation of the study was to focus transit investment on improving fixed bus route service, which could one day serve as a feeder network for a light-rail system. The additional funding to cover the operating expenses has proven a roadblock to significantly expanding the existing fixed route system. Limited transit funding could be stretched if land use patterns were altered to support transit investment. A phased transit implementation approach for regions characterized by rural suburban development is prudent.

Hardening transit infrastructure can be accommodated through a centers approach. The Metropolitan Bakersfield General Plan, jointly adopted by the City and County, identifies a centers approach. However, its implementation lacks the density needed to significantly expand transit usage.

The Bay Area Transit and Land Use Coalition (TALC) suggest a phased transit hardening strategy that promotes the concept of Express Bus/Bus Rapid Transit (BRT) as an interim step between fixed route bus and full rail implementation. The strategy focuses on planned intensification of TOD Centers. This concept of the phased transit hardening as the centers and corridors densify and ridership increases provides for an economical way to phase in rail transit. The following table incorporates the progression from rural to suburban to urban transit usage.

Table 3

Phased Transit Infrastructure Hardening

LOCAL	INTER-CITY	INTER-REGIONAL
Rural Transit Phases		
1) Rural Dial-a-Ride/Senior Transit	1) County Fixed Route/Senior Transit	1) Regional Bus/Greyhound
Suburban Transit Phases		
2) Urban Dial-a-Ride/Senior Transit	2) Intercity Commuter Heavy Rail	2) Amtrak/CalTrain
3) Private Taxi Service/Rideshare		
4) Fixed Route Bus		
Urban Transit Phases		
5) Shuttle bus/Circulator	3) High-Speed Rail/Mag Lev	3) High-Speed Rail/Mag Lev
6) Express Bus		
7) Bus Rapid Transit (BRT)		
8) Dedicated Bus-HOV-LEV lanes		
9) Light Rail		
10) Heavy Rail/Subway		

Source: Adapted from the Transit and Land Use Coalition (TALC)

TALC recommends that infill land use development around the transit centers gradually drive the intensification of transit infrastructure. As new low-density suburban development occurs, a phased land use plan for the eventual densification of the development to more intense urban uses around a transit center is needed.

Peter Calthrope in his 1993 book *The Next American Metropolis: Ecology, Community, and the American Dream*, proposes detailed Transit Oriented Development (TOD) standards that include the concept of phased land use intensification around transit centers. The design guidelines include "surface parking redevelopment."

> *"Land devoted to surface parking lots should be reduced through redevelopment and construction of structured parking facilities. The layout and configuration of the surface parking lots (near transit centers) should accommodate future redevelopment; design studies showing placement of future buildings and parking structures should be provided."*

One of the most effective land use methods to intensify low-density development around transit centers is controlling parking configuration. Conversion of parking lots to future buildings and parking structures can add intensity around a transit center. Implementation of other parking concepts such as joint use parking between office/carpooling/transit and retail/entertainment/ churches/housing can provide a more efficient and consistent usage of parking structures on weekends, weekdays and evenings. Reducing parking spaces near transit centers by 15 to 25 percent can be achieved due to greater pedestrian transit usage. Parking for carpooling, bicycling and transit commuters require additional consideration in this process.

Parking cost can also be used to promote development of a major transit center. By charging for parking, a disincentive is created for people to drive to the center, instead taking transit, carpooling, biking or walking. In Old Town Pasadena, proceeds from the parking fees and meters were used to finance pedestrian street improvements that transformed a blighted downtown into a vibrant pedestrian destination that boosted the business traffic in the area and created an infill node for the new Gold Line transit station at Mission Park.

Local general plans historically have taken very limited TOD approach. Circulation Plans as a tool for coordinating transit infrastructure are useful to begin identifying and planning for transit corridors and centers but have yet to be used for this purpose. The adoption of specific plan lines for transit corridors and centers is another tool that could begin the process of phased implementation of a TOD. Identification, and preservation of existing rail spurs could be preserved using the specific plan line as well. Finally, local land use elements and design guidelines should be revised to incorporate TOD centers and their phased intensification. By providing these mechanisms, the foundation can be laid to ensure that new development on the urban fringe implements the guidelines and provides the nodes and funding mitigation necessary to expand the transit system into the suburbanizing areas.

All of these transit studies will help identify how funds should be programmed to the multi-modal transportation system, especially transit systems over the next 20-years.

The Global Warming Solutions Act requires that by January 1, 2008, CARB must:

- Determine what California's statewide greenhouse gas emission level was in 1990
- Approve that level as the statewide limit, which will be achieved by 2020
- Publish a list of discrete "early action" greenhouse gas emission reduction measures by June 30, 2007 that can be implemented within the next three years
- Develop a "scoping plan" by January 1, 2009 to achieve the maximum technologically feasible and cost-effective reductions in GHG emissions from specific sources or categories of sources by 2020.

Kern COG did not include an analysis of GHG in its Draft EIR. Furthermore, the Attorney General's comments were not raised in response to the Notice of Preparation (NOP) but have now been raised following the release of the Draft EIR. CARB also did not comment on the NOP and did not submit a comment letter regarding the Draft EIR. Kern COG provided a copy of the NOP to the State Clearinghouse on November 22, 2006 after AB 32 and AB 1493 had already been passed by the California legislature. As a result, Kern COG determined that, at this programmatic level of analysis and given the absence of any guidance or implementation from CARB on implementing the Act, the EIR includes sufficient general disclosure of the project's air quality impacts, including criteria pollutants that contribute to the formation of GHG. That disclosure is included in the EIR's analysis of air emission impacts and mitigation measures to reduce those impacts. Even though CARB and other agencies with jurisdiction have not yet formulated any specific GHG mitigation recommendations to be adopted through RTP processes, the EIR recommends, and the RTP includes numerous policies that will reduce criteria pollutants, including related GHG emissions as evidenced in the Conformity Finding and results indicated in Table 2 above. Finally, Kern COG and local agencies within the County will be subject to AB 32 and AB 1493 and the regulations that will be implemented by CARB to achieve the emissions reductions goals of AB 32 and AB 1493.

As of the writing of this Final 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.

The comment that "the Regional Plan will result in a significant cumulative contribution to the GHG load" is the opinion of the Attorney General's office. The street and highway projects contained in the RTP are required to address increased congestion over time consistent with land use plans prepared and adopted by the local agencies. RTP Guidelines require consistency with local general plans. Despite the lack of CARB Guidelines and requirements for analyzing impacts of the RTP, the projects were analyzed by Kern COG to determine if they would reduce criteria emissions over time or for various years between 2008 and 2030. Referencing Tables 1 and 2, and Draft EIR Section 3.3, results of the CO_2 analysis and Air Quality Conformity Analysis indicate that criteria pollutants will be the same as the No Project or will be reduced over time with the Project.

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 2007 RTP compared to the current RTP (adopted in 2004). 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 (some of which are described above). Further, the RTP contains projects beyond those discussed under the Intelligent Transportation Systems (ITS) Element. 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. According to Sunne Wright McPeak, former State Secretary of the Business, Housing, and Transportation Agency, 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 will identify 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 Blueprint is expected to be completed in Fall 2008.

RESPONSE #5: The reports referenced in the comment were prepared in preparation for AB 32; however, GHG modeling tools have not been developed and RTP Guidelines do not presently require that an energy element be included in the 2007 RTP.

The RTP contains more than just Intelligent Transportation Systems (ITS) projects. The Plan contains a number of projects and significant funding for various forms of transportation in addition to streets and highways. Public transit has been enhanced in the 2007 RTP compared to the current RTP (adopted in 2004). 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, some of which are described above. Kern COG is also 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 contained in the same Air Basin (San Joaquin Valley Air Basin) and received a grant for Blueprint development from the State of California. According to Sunne Wright McPeaK, former State Secretary of the Business, Housing, and Transportation Agency, 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 will identify 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 Blueprint is expected to be completed in Fall 2008.

RESPONSE #6: The quotes from the RTP are taken from sections reflecting existing transit services in Kern County, not what is planned for implementation over the planning period or by the year 2030. Public transit over the next 20 years has been enhanced in the 2007 RTP over existing conditions and even when compared to the current RTP (adopted in 2004). 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.

The EIR contains an analysis of a reasonable range of alternatives including the VMT Reduction Alternative. The various suggestions in the comment that the EIR should identify feasible alternatives that would expand bus service appear to be a subpart of that alternative.

RESPONSE #7: The VMT Reduction Alternative relies on results of major studies (referenced previously) that have yet to be completed within the County. Study results are needed to identify the specific types of transit improvements, land use changes needed to support transit systems, and funding required to enhance public transit systems and major transit corridors.

Transit planning methodology to evaluate new or enhanced systems, programs or projects was conducted differently in the past. In the past, planning studies focused on transportation and land use policies contained in the general plans of local agencies. Now, public transit planning is conducted by Kern COG and local transit agencies to determine the most viable and desirable transit systems. Studies such as those referenced previously will consider what land use changes will be required to support enhanced transit use, and the types of systems that can be supported, including an assessment of costs and a financing program to implement study recommendations. It is important to identify the costs of enhanced transit improvements and the funding programs that would be required because the RTP must be "financially constrained" in accordance with federal and State RTP Guidelines and requirements. Furthermore, a shift in funding from other modes to enhanced transit services requires "buy-in" from the local agencies. If the local agencies do "buy-in" to enhanced transit systems and a shift in funding to such programs and improvements, then their general plans will need to be revised to support the land use patterns that can accommodate and sustain such services. This is important because the RTP Guidelines also require that the RTP plans and programs be consistent with local agency general plans. Referencing Page 9 of the RTP Guidelines (as amended in December 1999), "The RTPAs should be certain that the RTP and the circulation elements of the general plans within their region are consistent. The RTPs should also be consistent with Regional Transportation Plans in adjacent regions."

Air quality is a significant issue in Kern County and in the San Joaquin Valley. The preferred Alternative or the 2007 RTP provides a positive Air Quality Conformity Finding indicating reduction in criteria emissions. It is not possible to quantitatively assess the VMT Reduction Alternative at this time because transit studies (referenced previously) are required to identify potential improvements and resulting VMT and vehicle trip reductions. Such studies have not been concluded or approved by the local agencies for implementation. Based upon results included in Table 1, CO_2 emissions are expected to stay the same when the Project is implemented vs. the No Project Alternative. Conformity results referenced in Table 2 also indicate that criteria pollutants will lessen as the projects are implemented over time or between 2008 and 2030. As a result, it can be concluded that the No Project Alternative would result in worse air quality vs. the Project Alternative. Furthermore, the RTP EIR is required to evaluate the impacts of the Project, not to hypothesize about what the benefits or impacts of a different set of transportation improvements might be; especially when specific transit projects are not known at this time. No measuring stick is available at this time to quantify the benefits or disadvantages of shifting transportation funds from streets and highways to enhanced transit programs. Kern COG believes that it has identified a reasonable range of project alternatives in the Draft EIR considering the constraints referenced.

RESPONSE #8: As referenced in Response #4, a number of mitigation measures are included in Section 3.3 of the Draft EIR to address criteria emissions. Further, public transit has been enhanced in the 2007 RTP compared to the current RTP (adopted in 2004). 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 major land use and transportation studies (referenced previously). As previously indicated, there is no measuring stick in place at this time to quantify the benefits or disadvantages of shifting transportation funds from streets and highways to enhanced transit programs.

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. Kern COG will, however, include a mitigation measure in the Final EIR, which proposes that responsible agencies (local agencies, the Air

District, Caltrans, and others) consider the implementation of such measures during individual project development and construction.

RESPONSE #9: The RTP EIR is a Program EIR, not a Project EIR. It cannot be determined at this time how many trees would be impacted by the multi-modal transportation projects and programs contained in the RTP. In order to quantify the amount of displacement and required mitigation replacement, the specific details and design of each improvement project would be required. Furthermore, the responsible or implementing agency or project sponsor would be responsible for developing subsequent environmental documents for specific projects in the RTP, including the cities, the County and Caltrans. Finally, Section 3.4.1 (Biotic Resources) of the RTP Draft EIR includes a mitigation measure stating that "Any disturbed natural areas will be replanted with appropriate native vegetation following the completion of construction activities." This mitigation measure will address impacts on sensitive species as well as lessen carbon sequestration capacity impacts potentially caused by new multi-modal project level improvements.

RESPONSE #10: The RTP or Project does contain a number of the measures listed in the comment letter. Some of these systems are planned or have been implemented already by local agencies within the County. Similar projects in the RTP include the following:

- 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.

TCMs being implemented by the Destination 2030 RTP and 2004 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.

The addition of any new lanes along the freeway system in Kern County will require an HOV study in accordance with FHWA requirements.

RESPONSE #11: Both Kern COG and responsible agencies implementing projects outlined in the 2007 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 2007 RTP. Nonetheless, the analysis compared the Project to the No Project and indicates that under either alternative, CO_2 emissions would be the same. Conformity results referenced in Table 2 indicates that criteria pollutants will lessen as the projects are implemented over time or between 2008 and 2030. Further, the RTP does include measures to reduce GHG emissions including retrofit projects, transit enhancements, and other measures aimed at reducing vehicle trips and VMT.

FROM: Davis Warmer, Director of Permit Services, San Joaquin Valley Air Pollution Control District.

DATED: April 19, 2007

RESPONSE: #12 Mitigation Measure 3.3.1 on Page 3-32 will be revised by adding the following bullet: Mitigation measures related to construction emissions will be modified to reflect the following: "Use of newer construction equipment, use of cleaner fuel types, engine modifications, or use of exhaust after-treatment devices."

RESPONSE: #13 Mitigation Measure 3.3.1 on Page 3-32 will be revised by adding the following bullet: "Individual improvement projects will be analyzed by local agencies and Caltrans to identify whether Hazardous Air Pollutants (HAPs) would pose a risk to human health."

RESPONSE: #14 Mitigation Measure 3.3.1 on Page 3-32 will be revised by adding the following statement at the beginning of the Mitigation Measure: Compliance with Regulation VIII, Rules 8011-8081 will be required by CARB for this EIR.

RESPONSE #15 Mitigation Measure 3.7.1 on Page 3-92 will be revised by amending to the following statement at the beginning of the Mitigation Measure: Compliance with Rule 4002 will be required by CARB for this EIR. As such, prior to any demolition activity, an asbestos survey of existing structures on the project site may be required to identify the presence of asbestos containing building material (ACBM). In accordance with CAL-OSHA requirements, a certified asbestos contractor must remove any identified ACBM having the potential for disturbance.

RESPONSE #16 Mitigation Measure 3.3.1 on Page 3-32 will be revised by adding the following statement at the beginning of the Mitigation Measure: Compliance with Rule 4102 will be required by CARB for this EIR.

RESPONSE: #17 Reference Response to Comment 12 above.

RESPONSE: #18 Mitigation Measure 3.3.1 on Page 3-32 will be revised by adding the following bullets:

- Limit area subject to excavation, grading, and other construction activity at any one time.
- Limit the hours of operation of heavy duty equipment and/or the amount of equipment in use.

- Replace fossil-fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set)
- Require that all diesel engines be shut off when not in use to reduce emissions from idling.
- Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing of construction activity during the peak hour of vehicular traffic on adjacent roadways, and "Spare the Air Days" declared by the District.
- Implement activity management (May through October), lengthen the construction period to minimize the number of vehicles and equipment operating at the same time.
- Off road trucks should be equipped with on-road engines when possible.
- Minimize obstruction of traffic on adjacent roadways.

EDMUND G. BROWN JR.
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State of California
DEPARTMENT OF JUSTICE

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April 18, 2007

By Telecopy and E-mail

Ronald E. Brummett, Executive Director
Kern Council of Governments
1401 19th Street, Suite 300
Bakersfield, CA 93301

RE: Draft Environmental Impact Report For the 2007 Destination 2030 Regional Transportation Plan (State Clearinghouse No. 2006111119)

Dear Mr. Brummett:

The Attorney General submits these comments to the Kern Council of Governments ("Council") on the Draft Environmental Impact Report For the 2007 Destination 2030 Regional Transportation Plan ("Regional Plan"). The Attorney General provides these comments pursuant to his independent power and duty to protect the natural resources of the State from pollution, impairment, or destruction in furtherance of the public interest. (*See* Cal. Const., art. V, § 13; Cal. Gov. Code, §§ 12511, 12600-12; *D'Amico v. Board of Medical Examiners*, 11 Cal.3d 1, 14-15 (1974)). These comments are made on behalf of the Attorney General and not on behalf of any other California agency or office.

Under the California Environmental Quality Act, Public Resources Code § 21000, et seq. ("CEQA"), the Council has an obligation to consider global warming impacts of the Regional Plan in the draft EIR. The projects and priorities identified in the Regional Plan could result in significant increases in emissions of greenhouse gases that cause global warming, and any increase in such emissions will make it more difficult for the state to achieve the greenhouse gas reductions required by Assembly Bill 32. The final EIR must evaluate the global warming impacts of the projects and priorities adopted in the Regional Plan and discuss feasible alternatives and mitigation measures to avoid or reduce those impacts. 1

Global Warming in California

The Intergovernmental Panel on Climate Change of the United Nations recently published its finding that overwhelming evidence establishes that global warming is

occurring and is caused by human activity.[1] With respect to impacts in the state, the California Climate Change Center reports that temperatures are expected to rise 4.7 to 10.5°F by the end of the century.[2] These increases would have serious consequences, including substantial loss of snow-pack, an increase of as much as 55% in the risk of large wildfires, and reductions in the quality and quantity of agricultural products.[3] Additionally, the report predicts increased stress on the state's vital resources and natural landscapes.[4] Global warming will also slow the progress toward attainment of the ozone air quality standard by increasing the number of days that are meteorologically conducive to the formation of ozone.[5]

In June 2005, the California Energy Commission reported that California produced 493 million metric tons of carbon dioxide-equivalent greenhouse gas ("GHG") emissions in 2002.[6] Of those emissions, 82% were emissions of carbon dioxide from fossil fuel combustion.[7] Fossil fuel consumption in the transportation sector was the single largest source of California's GHG emissions in 2002. According to the report, transportation, which includes emissions from vehicles and planes, accounted for 41.2% of GHG emissions in the state.[8]

California's Actions to Address Global Warming

On June 1, 2005, Governor Schwarzenegger issued Executive Order S-3-05. The Order recognized California's vulnerability to global warming and the need for

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1. "Climate Change 2007: The Physical Science Basis, Summary For Policymakers" (Fourth Assessment Report of the IPCC, February 2007).

2. Amy Lynd Luers, Daniel R. Cayan et. al, *Our Changing Climate: Assessing the Risks to California* (July 2006) at p. 2. The report was prepared by the Climate Change Center at the direction of CalEPA pursuant to its authority under Executive Order S-3-5.

3. *Id.* at pp.2, 10.

4. *Ibid.*

5. Climate Action Team Report, Executive Summary, p.xii (CalEPA March 2006).

6. "Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2002 Update."

7. Gerry Bemis and Jennifer Allen, *Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2002 Update* (June 2005) at p.5.

8. *Id.* at pp. 6-7.

implementation of mitigation measures to limit the impacts to the state. The Order specifically found that global warming results in increased temperatures that threaten to greatly reduce the Sierra snow-pack, one of the State's primary sources of water, threaten to further exacerbate California's air quality problems, and adversely impact human health by increasing heat stress and heat related deaths, and the risk of asthma, respiratory and other health problems.

To counteract the warming trend, the Governor set GHG emission reduction targets for California: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce emissions to 1990 levels; by 2050, reduce emissions to 80 percent below 1990 levels.

Assembly Bill 32, the California Global Warming Solutions Act of 2006, codified at Health and Safety Code Section 38500, et seq. ("AB 32"), was signed into law by the Governor on September 27, 2006. The bill demonstrates that the Legislature recognizes the serious threats that global warming poses to California.[9] 1

To combat these threats, AB 32 requires reduction of the state's GHG emissions to 1990 levels by 2020,[10] a time well within the 2030 planning horizon of the Regional Plan. This emissions cap is equal to a 25% reduction from current levels.[11] The bill directs that by June 30, 2007, the California Air Resources Board ("CARB") shall publish a list of discrete early action GHG emission reduction measures that will be implemented by 2010.[12] CARB must then adopt comprehensive regulations that will go into effect in 2012 to require the actions necessary to achieve the GHG emissions cap by 2020.[13] The legislation also encourages entities to voluntarily reduce GHG emissions prior to 2012 by offering credits for early voluntary reductions.[14]

California Environmental Quality Act

CEQA and its implementing Guidelines provide that in any of the following situations, a finding must be made that the project may have a significant effect on the environment: 2

(1) A proposed project has the potential to degrade the quality of the

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9. Health & Safety Code § 38501.

10. Health & Safety Code § 38550.

11. 9/27/2006 Press Release from the Office of the Governor, available at http://gov.ca.gov/index.php?/print-version/press-release/4111.

12. Health & Safety Code § 38560.5.

13. Health & Safety Code § 38562.

14. Health & Safety Code §§ 38562(b)(3), 38563.

environment, curtail the range of the environment, or to achieve short-term, to the disadvantage of long-term, environmental goals.

(2) The possible effects of a project are individually limited but cumulatively considerable. As used in this paragraph, "cumulatively considerable" means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.

(3) The environmental effects of a project will cause substantial adverse effects on human beings, either directly or indirectly.[15]

As part of the analysis carried out in an EIR, the agency must formulate mitigation measures and examine alternatives to the proposed project. CEQA mandates that public agencies refrain from approving projects with significant environmental effects if there are feasible alternatives or mitigation measures that can substantially lessen or avoid those effects .[16] 2

As the Court of Appeal concluded in *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 720 [internal quotation omitted]):

"[o]ne of the most important environmental lessons evident from past experience is that environmental damage often occurs incrementally from a variety of small sources. These sources appear insignificant, assuming threatening dimensions only when considered in light of the other sources with which they interact. Perhaps the best example is air pollution, where thousands of relatively small sources of pollution cause a serious environmental health problem. CEQA has responded to this problem of incremental environmental degradation by requiring analysis of cumulative impacts."

The Regional Transportation Plan

The Regional Plan is a long-range regional transportation plan that includes policies and goals to guide transportation decisions and a list of proposed transportation projects needed through 2030. Transportation projects must be contained in, or consistent with, the Regional Plan to qualify for federal or state funding.

Federal law directs that the Regional Plan shall include projects and strategies that will, among other things: "protect and enhance the environment"; "promote energy 3

15. Public Resources Code § 21083(b); see also Cal.Code Regs., tit. 14 § 15065.

16. Public Resources Code § 21081; see also, *Mountain Lion Foundation v. Fish and Game Commission*, 16 Cal.4th 105, 134 (1997).

conservation"; and "improve the quality of life. ...." (23 U.S.C.A. § 134(h)). The Regional Plan also "shall 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." (23 U.S.C.A. § 134(i)(2)(B)(i)). 3

The County's population is expected to increase 55% by 2030, the time-frame covered by the Regional Plan. Accordingly, large increases in vehicle miles traveled are also expected. The Regional Plan includes new road construction, road widening and other transportation improvements designed to accommodate these new drivers. The Regional Plan authorizes expenditure of $1.7 billion dollars on "major highway improvements." However, the EIR contains no discussion of the impact of these improvements on GHG emissions or the state's ability to achieve the 25% reduction in GHG emissions required by AB 32.

The EIR Must Consider Global Warming Impacts

The Governor's Executive Order and AB 32 inform agencies' obligations under CEQA. The existence of global warming is indisputable; it is causing significant environmental impacts in California and will cause future catastrophic impacts if emissions levels are not substantially reduced; and many incrementally small but cumulatively significant sources of emissions are being approved and permitted every day.

Construction of the $1.7 billion dollars worth of major highway improvements and other projects authorized in the Regional Plan will result in a significant cumulative contribution to the GHG load. Once permitted, these projects will continue to have environmental implications for decades. To ensure that these projects do not conflict with or prevent compliance with AB 32's requirement to reduce GHG emissions to1990 levels, the Council must include feasible measures to avoid or reduce GHG emissions associated with the projects. If the proposed transportation improvements are carried out without implementing such measures, it will be more difficult for the state to achieve the required statewide GHG reductions and will place a greater burden on other sources of emissions (and may result in greater cost to achieve the required reductions). 4

In light of the serious threat to the environment from existing GHG emissions, and the emission reduction requirements of AB 32, the Council has a current obligation under CEQA to address the potential environmental impacts from increased GHG emissions from the projects in the Regional Plan and adopt feasible mitigation measures. The EIR must describe the existing level of GHG emissions in the County, and the estimated increased GHG emissions associated with the transportation projects

included in the Regional Plan.[17] CEQA then requires that the Council evaluate the feasible alternatives and mitigation measures that would avoid or reduce GHG emissions associated with the actions included in the Regional Plan.[18] In addition to meeting CEQA requirements, these measures will help California meet its statutory requirements for GHG reductions. Moreover, AB 32 includes a provision to give credit for measures that are taken to reduce GHG emissions before the regulations implementing the statute are adopted (the first implementing regulations will be adopted in June 2007). 4

The Climate Action Team Report to Governor Schwarzenegger and the Legislature (CalEPA March 2006) identifies some possible strategies for regional transportation planning that could achieve significant GHG emission reductions. (Report at p.57.) The first strategy - Measures to Improve Transportation Energy Efficiency and Smart Land Use and Intelligent Transportation - includes: "[i]ncorporating energy efficiency and climate change emissions reduction measures into the policy framework governing land use and transportation, including framework for developing energy element in state transportation and regional planning documents." (*Id.* at p.58.) It also includes: "[d]iversifying transportation energy infrastructure and advancing measures to slow the rate of vehicle miles traveled growth and excessive reliance on petroleum." *Id.*[19] 5

The second strategy identified by the Climate Action Team is "Smart Land Use and

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17. This estimate should take into account the effect of "induced-demand" (i.e., increased number and/or distance of vehicle trips per household) that will result from the road improvements in the Plan that are designed to improve (or maintain) traffic flows and relieve congestion, during a period of large population growth. The draft EIR (p. 5-1) identifies "land use and growth [that] may occur in areas not previously envisioned" as a significant, unavoidable environmental impact of the Regional Plan. Presumably, this would be growth in areas that are not served by public transit. The draft EIR should also evaluate these impacts on GHG emissions.

18. There are several models or calculators that local governments can use to evaluate GHG reductions from various actions. See, Center for Clean Air Policy, Transportation Emissions Guidebook, Emissions Calculator (www.ccap.org/safe/guidebook.php); California Energy Commission, The Energy Yardstick: Using PLACE3S to Create More Sustainable Communities (www.energy.ca.gov/places/); and Clean Air and Climate Protection Software - A Joint Project of STAPPA/ALAPCO, ICLEI and the EPA (www.cacpsoftware.org/).

19. The Report predicts GHG reductions from these strategies of 1.8 million metric tons of CO2 by 2010 and 9 million metric tons by 2020. (*Id.*)

Intelligent Transportation." (*Id.* at 57.)[20] Smart land use strategies "encourage jobs/housing proximity, promote transit oriented development, and encourage high-density residential/commercial development along transit corridors." (*Id.*) Intelligent Transportation Systems is "the application of advanced technology systems and management strategies to improve operational efficiency of transportation systems and movement of people, goods and services." (*Id.*)

While the Regional Plan has addressed some of these strategies, the EIR should address the potential to reduce GHG emissions by increasing implementation of these and other strategies and, where appropriate, they should be added to the Regional Plan. 5

The Council, of course, has the opportunity and responsibility to identify the specific alternatives and mitigation measures to reduce GHG emissions in the final EIR and in the Regional Plan, and adapt them to local conditions. We have identified some possibilities below for the Council's consideration.

The Council, for example, should consider in the EIR whether including additional public transit projects and projects to encourage transit-oriented development in the Regional Plan would reduce GHG emissions. The proposed Regional Plan includes expenditures of $1.7 billion for major highway improvements, but only $60 million for transit, passenger rail, and non-motorized projects.[21] The Plan identifies additional transit projects (for total expenditure of $112 million) that could be implemented, but funding is not allocated for them.[22] The brief discussion of the VMT Reduction Project Alternative in the draft EIR does not consider GHG emission reductions that could be achieved under this alternative, and also does not adequately explain the conclusion that air quality (referring to ozone levels) is expected to worsen even with a major shift to enhanced alternative modes of transportation. (p. 4-3 to 4-5). 6 7

The EIR should discuss, and the Plan should include, a policy to require mitigation of GHG emissions that result during both project construction and over the life of the project. These mitigation measures could include a requirement to use the most energy-efficient building materials and lighting technology. For example, alternative formulations of cement[23] and asphalt,[24] that have substantially lower GHG emissions, 8

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20. The Report predicts GHG reductions from these strategies of 5.5 million metric tons of CO2 by 2010 and 18 million metric tons by 2020. (*Id*).

21. Regional Plan, p.4-20, Summary of Unconstrained Projects.

22. Regional Plan, p.4-17, Summary of Constrained Projects.

23. Cement manufacture ranks ninth among the sources of U.S. GHG emissions. EPA, Inventory of U.S. Greenhouse Gas Emissions and Sinks, 1990-2000

should be used if they are available. The U.S. Green Building Council publishes LEED standards that may be used to evaluate building materials. The Governor's Executive Order No. S-20-04 (issued July 27, 2004) requires state construction and renovation projects to obtain LEED Silver or higher certification.[25] 8

The EIR should consider the impact on GHG levels from loss of carbon sequestration capacity when trees (including those not part of a sensitive, threatened or endangered habitat) are destroyed during construction of the new road and road widening projects. This seems like a strong candidate to be the subject of mitigation, such as a replanting program designed to replace the lost carbon sequestration capacity. 9

One possible smart land use (or "smart growth") measure that the EIR should consider is to give priority to road maintenance and other projects that will enhance existing residential areas and encourage infill in neighborhoods in and around Bakersfield where public transit is available for residents to reach employment centers.

The EIR should consider, as further examples, potential GHG reductions from other mitigation measures, such as increased public transit routes and hours or frequency of operation; high-occupancy vehicle lanes; transit vouchers; incentives for van pooling and ridesharing; other transportation demand management measures; retrofitting traffic lights to use LED technology; purchase of hybrid electric or hydrogen fuel cell buses;[26] planting trees; and adoption of additional funding priorities that target spending toward population and employment centers and withhold infrastructure funding from greenfield development at the urban edge. The website of the organization ICLEI/Local Governments for Sustainability (www.iclei.org) describes many actions taken by state and local governments to reduce GHG emissions that could also be appropriate 10

(Washington, D.C., April 2002, ES-4, 1-13 and 1-14). Alternative formulations may be available to reduce GHG emissions. Climate Action Report, p.54.

24. "Warm-mix" asphalt technology that significantly reduces GHG emissions is currently being evaluated and may prove to be a feasible alternative road paving material. See, "Warm-Mix Asphalt (WMA) Potentially Can Provide Important Benefits for Paving Contractors, Reduce Fuel Costs and Diminish Green-House Gases" in Construction Equipment, March 1, 2007 (www.constructionequipment.com/article/CA6421459.html).

25. For unavoidable GHG emissions, contribution to a GHG mitigation fund should be considered.

26. These are currently in use in California by AC Transit and SunLine Transit Agency. See, www.actransit.org/environment/hyroad_main.wu and www.sunline.org/home/index.asp?page=120

mitigation measures for this project.[27] The EIR should also evaluate how the Regional Plan can incorporate the flexibility necessary to fund and promote new transportation alternatives, such as infrastructure for the California Hydrogen Highway Network, electric vehicle charging facilities, or solar energy applications, that are developed during the planning period. 10

Global warming presents California with one of its greatest challenges. The Council has the opportunity to begin addressing global warming in a constructive manner while educating the public and decision-makers. We urge the Council to begin meeting the challenge with this Regional Plan and environmental impact report. 11

Thank you for considering these comments.

Sincerely,

Sandra Goldberg

SANDRA GOLDBERG
Deputy Attorney General

For EDMUND G. BROWN JR.
Attorney General

27. This website includes information about actions to address climate change underway in 30 California cities or counties. Several of these jurisdictions have adopted comprehensive plans to reduce GHG emissions, such as the Marin County Greenhouse Gas Reduction Plan (October 2006) and the Climate Action Plan for San Francisco (September 2004).

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

April 19, 2007

Ms. Raquel Pacheco
Kern Council of Governments
1401 19th Street, Suite 300
Bakersfield, CA 93301

Project: Kern County 2007 Regional Transportation Plan **(RTP)**

Subject: Conformity and CEQA Comments for Subject Project

District Reference No: 200700456

Dear Ms. Pacheco:

The San Joaquin Valley Unified Air Pollution Control District (District) has reviewed the project referenced above and offers the following comments:

I. CONFORMITY ANALYSIS

The San Joaquin Valley Unified Air Pollution Control District has received the Air Quality Conformity Analysis for interagency consultation. The District's comments are presented in the enclosed attachment titled: *Interagency Consultation, Draft Air Quality Conformity Analysis.*

II. DISTRICT RULE 9510 (INDIRECT SOURCE REVIEW)

District Rule 9510 (Indirect Source Review) was adopted by the District's Board on December 15, 2005, and became effective March 1, 2006. Rule 9510 was adopted by the District's Board to reduce the impacts of growth in emissions resulting from new land development in the San Joaquin Valley, including transportation and transit projects. Transportation projects consisting of modifications of existing roads that are not intended to increase single occupancy vehicle capacity, or transportation control measures included in a District air quality attainment plan, would be exempt from Rule 9510.

12

Transportation or transit projects subject to Rule 9510 are required to reduce construction exhaust emissions by 20 percent for NOx and 45 percent for PM10, as compared to the statewide fleet average. If the required emission reductions cannot be

Seyed Sadredin
Executive Director/Air Pollution Control Officer

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Central Region (Main Office)
1990 E. Gettysburg Avenue
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Southern Region
2700 M Street, Suite 275
Bakersfield, CA 93301-2373
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achieved through onsite measures, the rule requires payment of offsite mitigation fees. One hundred percent of all offsite mitigation fees received by the District are used by the District's existing Emission Reduction Incentive Program (ERIP) to fund emission reduction projects, achieving emission reductions in behalf of the project. Additionally, if a project is subject to off-site emission reduction fees, the developer is required to pay an administrative fee equal to four percent (4%) of the required off-site fees. This fee is to cover the District's cost of administering the off-site emission reduction program.

The RTP identifies projects for streets and highway systems, urban and rural public transportation, rail, aviation, pedestrian, and bicycle facilities. Transportation or transit projects, where construction exhaust emissions equal or exceed two (2.0) tons NOx or two (2.0) tons of PM10, would be subject to the rule. The District has estimated that construction exhaust emissions associated with constructing a new 2-lane paved road, would exceed the two-ton applicability threshold. Therefore, many of the projects presented in the RTP may be subject to District Rule 9510. Options to mitigate emissions at the construction site include: use of newer construction equipment, use of cleaner fuel types, engine modifications, or use of exhaust after-treatment devices. New equipment can provide a high percentage of emission reductions, depending on the horsepower and the year of the equipment. Emission reductions are readily achievable through utilizing existing technology along with a mix of newer construction equipment and retrofit devices. 12 Cont

The District recommends that subsequent, project specific environmental review documents characterize the emission reductions achieved by complying with District Rule 9510. The District further recommends that potential costs of complying with Rule 9510 be considered during the transportation budgeting process. District staff is available to assist with understanding compliance with Rule 9510.

III. CEQA ANALYSIS

A. Findings of Significance

The San Joaquin Valley Air Basin (SJVAB) is currently designated as serious non-attainment for Ozone and non-attainment (no classification) for PM2.5. On October 30, 2006, the United States Environmental Protection Agency (US EPA) found that the San Joaquin Valley had attained the PM10 standard. The US EPA based its determination upon monitoring data demonstrating that the ambient air quality had met the requirements for attainment. The US EPA's finding does not change the District's classification as a serious PM10 non-attainment to attainment area. Re-designation from serious non-attainment to attainment requires additional documentation and may occur at some future date. 13

Transportation projects may contribute to the overall decline in air quality due to construction activities in preparation of the site, and ongoing traffic and other operational emissions. Although individual transportation projects may not exceed the District's Thresholds of Significance for ozone precursors of 10 tons per year of reactive

organic gases (ROG) and oxides of nitrogen (NOx), the projects may have a cumulative significant impact on air quality. As discussed above in Section II, emission reductions achieved through compliance with District Rule 9510 will reduce project specific impacts on air quality within the SJVAB. As discussed below, *Applicable District Rules*, project specific impacts on air quality may be further reduced by compliance with applicable District rules.

13 Cont

Transportation projects may be located near sensitive receptors. Proposed transportation projects should be analyzed to see if Hazardous Air Pollutants (HAPs) would pose a risk to human health. If a project is near sensitive receptors and HAPs are a concern, the project developer should perform a Health Risk Assessment (HRA). For more information, please refer to the attached document titled *Health Risk Assessment (HRA)*.

B. Applicable District Rules

Rules and Regulations have been adopted by the District to reduce emissions throughout the San Joaquin Valley. Specific transportation projects may be subject to additional District Rules not enumerated below. To identify additional rules or regulations that apply to project specific activities, or for further information, the project proponent is strongly encouraged to contact the District's Small Business Assistance Office at (559) 230-5888. Current District rules can be found at www.valleyair.org/rules/1ruleslist.htm.

Regulation VIII (Fugitive PM10 Prohibitions) Rules 8011-8081 are designed to reduce PM10 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. The District's compliance assistance bulletin for construction sites can be found at www.valleyair.org/busind/comply/PM10/Reg VIII CAB.pdf.

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Rule 4002 (National Emission Standards for Hazardous Air Pollutants) In the event that any portion of an existing building will be renovated, partially demolished or removed, the project will be subject to District Rule 4002. Prior to any demolition activity, an asbestos survey of existing structures on the project site may be required to identify the presence of any asbestos containing building material (ACBM). In accordance with CAL-OSHA requirements, a certified asbestos contractor must remove any identified ACBM having the potential for disturbance. If you have any questions concerning asbestos related requirements, please contact the District's Compliance Division at (559) 230-6000 or contact CAL-OSHA at (559) 454-1295. The District's Asbestos Requirements Bulletin can be found online at http://valleyair.org/busind/comply/asbestosbultn.htm.

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Rule 4102 (Nuisance) This rule applies to any source operation that emits or may emit air contaminants or other materials. In the event that the project or construction of the

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project creates a public nuisance, it could be in violation and be subject to District enforcement action.

16 Cont

Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations) If asphalt paving will be used, then paving operations of this 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.

Rule 9510 (Indirect Source Review) Rule 9510 establishes emission reduction requirements for NOx and particulate matter (PM). The rule applies to residential and non-residential development projects, including transportation and transit projects, which equal or exceed the District's established applicability thresholds. Emission reductions required by the rule that are not achieved through on-site emission reduction measures are subject to off-site emission reduction fees. These fees are used by the District to fund emission reduction projects, mitigating the project's potential impact on air quality in the San Joaquin Valley Air Basin.

17

Transportation projects are subject only to construction exhaust emission reduction requirements. Rule 9510 requires construction exhaust emissions to be reduced by 20 percent for NOx and 45 percent for PM10 when compared to the statewide fleet average. Options to mitigate these emissions at the construction site include: use of newer construction equipment, use of cleaner fuel types, engine modifications, or use of exhaust after-treatment devices. New equipment can provide a high percentage of emission reductions, depending on the horsepower and the year of the equipment. Emission reductions are readily achievable through utilizing existing technology along with a mix of newer construction equipment and retrofit devices. For more information regarding alternative fuels and equipment retrofits, visit the ARB website at www.arb.ca.gov/diesel/diesel.htm.

C. Recommended Mitigation Measures

The District encourages innovation in measures to reduce air quality impacts. There are a number of features that could be incorporated into the design of these projects to provide additional reductions of the overall level of emissions. The suggestions listed below should not be considered all-inclusive and are options that the agency with the land-use authority should consider for incorporation into the project.

Construction activity mitigation measures may include:

- Limit area subject to excavation, grading, and other construction activity at any one time
- Limit the hours of operation of heavy duty equipment and/or the amount of equipment in use
- Replace fossil-fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set)
- Require that all diesel engines be shut off when not in use to reduce emissions from idling

18

- Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing of construction activity during the peak-hour of vehicular traffic on adjacent roadways, and "Spare the Air Days" declared by the District.
- Implement activity management (e.g. rescheduling activities to reduce short-term impacts)
- During the smog season (May through October), lengthen the construction period to minimize the number of vehicles and equipment operating at the same time.
- Off road trucks should be equipped with on-road engines when possible.
- Minimize obstruction of traffic on adjacent roadways.

The District encourages fleet owners/operators to examine the District's Heavy-Duty Engine program to reduce project emissions. The Heavy Duty program provides incentives for the replacement of older diesel engines with new, cleaner, fuel-efficient diesel engines. The program also provides incentives for the re-power of older, heavy-duty trucks with cleaner diesel engines or alternative fuel engines. New alternative fuel heavy-duty trucks also qualify. For more information regarding this program contact the District at (559) 230-5858 or visit our website at www.valleyair.org

18 cont.

Heavy equipment powered by alternative diesel fuel blends and equipment that meets current off-road engine emissions standards reduce construction related air impacts. Alternative-fueled equipment may use Compressed Natural Gas (CNG), Liquid Propane Gas (LPG), electricity, or other designated alternative fuels to achieve greater emission reductions than current diesel equipment. Equipment with uncontrolled engines may be re-powered with an emissionized engine that meets current standards. Tier I, Tier II, and Tier III engines have significantly less NOx and PM emissions compared to uncontrolled engines.

District staff is available further discuss the regulatory requirements that are associated with this transportation projects. If you have any questions, please call Ms. Georgia Stewart at (559) 230-5937.

Sincerely,

David Warner
Director of Permits Services

Arnaud Marjollet
Permit Services Manager

DW:gs

Enclosures: Interagency Consultation, Draft Air Quality Conformity Analysis; Health Risk Assessment (HRA)

April 18, 2007

Lauren Dawson
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Plan Development

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Interagency Consultation on the
Draft Conformity Analysis
for the
2007 Federal Transportation Improvement Program, Ammendment #2
and the
2007 Regional Transportation Plan (RTP)

KERN COUNCIL OF GOVERNMENTS
Released for review March 6, 2007

The San Joaquin Valley Unified Air Pollution Control District has received the Air Quality Conformity Analysis for interagency consultation and is pleased to provide the following comments on the analysis.

1. Page 1 – Last paragraph: "Currently, the San Joaquin Valley…is designated as **nonattainment areas…carbon monoxide (CO)** " The attainment status for the San Joaquin Valley would more accurately be referred to as having a maintenance designation for CO for urbanized/metropolitan areas in Kern, Fresno, Stanislaus and San Joaquin counties. Same comment-Page 9-- Third paragraph: "…currently designated as nonattainment for…carbon monoxide (CO)…"

2. References to the San Joaquin Valley Unified Air Pollution Control District are made a number of times using a variety of names. For consistency, clarity and accuracy I suggest referring to the District as San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) in the first occurrence and use the acronym in subsequent references.

3. Page 3-- Under CONFORMITY TESTS: "The conformity tests specified in the …and. (2) the **emissions reduction test"-** the correct term is **interim emissions tests.** Also later in the paragraph, "If there is no approved air quality plan…the **emission reduction test** applies" replace with **interim emissions**

1

test. Also Page 44 – First paragraph: "The principal requirements of the federal…or ***an emissions reduction test"*** replace with **interim emissions test.**

4. Page 10- I suggest the addition of the following underlined sections: "State Implementation Plans have been prepared to address carbon monoxide ***(maintenance plan) for the Bakersfield Metropolitan Area, the Fresno, Modesto, and Stockton Urbanized Areas, 1-hour*** Ozone, and PM10. ***State Implementation Plans are being prepared for 8-hour Ozone (due to EPA 6/15/07) and PM2.5 (due to EPA 4/5/08).***

5. Page 10 – The term "designated" is used to define the attainment status, the term "classified" is used to describe the relative severity of the pollution. I suggest making the following changes for accuracy: "The San Joaquin Valley is *designated* **classified** (delete designated) a serious nonattainment area for the ***new*** 8 -hour ozone… delete NEW. Same paragraph, "EPA also designated the San Joaquin Valley as nonattainment for the ***new*** PM2.5 standards." Replace **NEW with 1997** (there are also 2006 PM2.5 standards) *State Implementation Plans for 8-hour ozone and PM2.5 standards are being prepared. The 8-hour ozone plan is due to EPA June 15, 2007. The PM2.5 plan is due to EPA April 5, 2008.* Page 12--Fourth paragraph: "The San Joaquin Valley is currently ***designated*** as an Extreme…" replace designated with **classified.**

6. Page 13 – Table 1-3: Need to **add** the units i.e., **tons/day.** Also same page third paragraph, last sentence "approval the trading mechanism." Need to add: approval **of** the trading mechanism." Page 15: Table1-4 needs to have units added e.g., **tons/day and tons/year.**

7. Page 16--**"Amendment #XX"** -Appears numerous places in Conformity Analysis-insert proper Amendment number. (See pages 9, 45 etc.)

8. Page 19 – Chapter 2- *Latest Planning Assumptions and Transportation Modeling* and Table 2-1 should reflect and be consistent with the *Transportation Model and Latest Planning Assumptions Summary* chart data transmitted 10/19/06 to the SJV Model Coordinating Committee.

9. I suggest adding RACM commitment identification codes to the *Timely Implementation of Transportation Control Measures* chart.

The San Joaquin Valley Unified Air Pollution Control District concludes that this draft Conformity Analysis meets the requirements of the Federal Transportation Conformity Rule. Thank you for the opportunity to comment.

2

Health Risk Assessment (HRA)

General Comments:
The Health Risk Assessment (HRA) guidelines promulgated by the California Office of Environmental Health Hazard Assessment (OEHHA) states the use of the latest version of HARP (Hot Spots Analysis and Reporting Program) for health risk determination [http://www.arb.ca.gov/toxics/harp/harp.htm] and OEHHA (http://www.arb.ca.gov/toxics/healthval/healthval.htm) risk assessment health values be used.

The District's thresholds of significance for Hazardous Air Pollutants (HAPs) are the probability of contracting cancer for the Maximally Exposed Individual (MEI) exceeds 10 in one million or ground level concentrations of non-carcinogenic toxic air contaminants would result in a Hazard Index greater than 1 for the MEI. A Health Risk Assessment (HRA) should include a discussion of the toxic risk associated with the proposed project, including project equipment, operations, and vehicles.

The District requires that all input files used to conduct the Health Risk Assessment (HRA) be submitted in electronic format. Providing electronic input files to the District for modeling facilitates the District's confirmation of the HRA in a timely manner.

Source Determination:
When making an air quality assessment for a land use project going through the CEQA process, the District considers all sources of potential emissions whether they are permitted, not permitted, or to be permitted in the future. If the modeling submitted does not include sources that may be permitted in the future, the District would have to assume that the impact from HAP emissions for a project is significant (cancer risk greater than 10 in a million and/or hazard indices greater than 1). The CEQA Initial Study or EIR may exclude sources that are permitted, as long as it is assumed that the risk from those sources may be significant. In addition, any sources that are not permitted must still be modeled and any risk is assumed to be over the District's level of significance and mitigated, see examples below.

Example #1:
An Initial Study or EIR Identifies sources (Diesel IC engines > 50HP) that will require District permits and there are no other sources of toxic pollutants identified. In this case there would be no need to have an HRA performed since the District permitting process will determine the risk from the project and limit the use, if needed, to ensure that it is below the District's levels of significance.

Example #2:
An Initial Study or EIR Identifies sources that will require District permits. It may seem that there are only permitted sources associated with this proposed project, but there are other sources of toxic pollutants that must be evaluated,

specifically, emissions from 'passenger car equivalent' travel, truck travel and idling from the transporting of materials in and out of the facility. Therefore, the following options are available:

1) Conduct an HRA and include all sources (Permitted and Non-permitted)
2) Conduct an HRA and include only Non-permitted sources. They would then assume that the risk from Non-permitted source is above the District's significance level and mitigate all the risk determined from the HRA.

Receptors

A receptor is defined as a point where an actual person (residential or worker) may be located for a given period of time. The period of time is based on the type of assessment that is being performed. For Example, if you were going to place a receptor in a river to determine short-term (1 hour) exposure that maybe appropriate. To place a receptor on the river to determine long-term (1 year) exposure would not. It is reasonable to assume that a person may be on the river for an hour but not for 24 hours per day, 7 days per week, for 70 years in the same locate, unless the person lives or works on the river.

Worker Receptors

Offsite:

Offsite worksites that are not directly associated (owned) with the operation of the proposed project are considered to be offsite worksites for the purposes of modeling. These receptors should be included in any modeling runs.

Onsite:

Onsite worker receptors are not included in any modeling runs unless the following is true:

- The worker is living onsite and is not being paid to live onsite. The worker will be modeled for a 70 yr exposure.

Sensitive Receptors

Offsite:

All sensitive receptors should be included in any modeling runs within 2 km of the proposed site, unless otherwise determined by the District. A sensitive offsite receptor is defined as the following:

- Schools
- Daycare facilities
- Hospitals
- Care facilities (adult/elderly)
- Residential (if not covered by another grided receptor)

Onsite:

Onsite sensitive receptors are defined as the following:

- Schools
- Daycare facilities

- Hospitals
- Care facilities (adult/elderly)
- Residential
    - Worker Family
    - Workers not paid to live onsite
    - Family members 18 or older

The family members of a facility owner are not included in the HRA unless the child is 18 or older. In this case, the child is of legal age and a parent can not waive his/her rights.

The project consultant should contact the District to review the proposed modeling approach before modeling begins. For more information on hazardous air pollutants (HAPs) analyses, please contact Mr. Leland Villalvazo, Supervising Air Quality Specialist, at (559) 230-6000 or hramodeler@valleyair.org.

3.0 CHANGES, ADDITIONS AND CORRECTIONS TO THE DRAFT EIR

3.1 INTRODUCTION

The following changes, additions and corrections to the Draft EIR are recommended. Such changes, additions and corrections have been identified to address written comments received on the Draft EIR.

A subsection is added to Section 3.3 Air Quality to address project impacts in terms of global warming. This subsection will include references to State legislation, including AB 32 and AB 1493,, which address global warming. The subsection will be added to page 3-26 at the end of the "Regulatory" section.

Global Warming Regulatory Setting

This section refers to the recent passage of California Assembly Bill (AB) 32, or the Global Warming Solutions Act of 2006, which was signed and passed into law by Governor Arnold Schwarzenegger on September 27, 2006. The Act codifies California's atmospheric greenhouse gas (GHG), which is composed of carbon dioxide (CO_2), methane, nitrous oxide (NO_X), hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. The Act establishes GHG emissions targets by requiring that the State's global warming emissions be reduced to 1990 levels by 2020. The Act also directs the California Air Resources Board (CARB) to enforce the statewide cap and would initiate the first phase of program requirements in 2012. The Act makes no mention of local governments or how cities and counties may be affected by future regulations. The regulations developed by CARB in response to the Act will address point sources of greenhouse gas emissions.

Other legislation (AB 1493) requires that CARB develop and adopt the nation's first GHG emission standards for automobiles. These standards are not yet established and are not available as a tool in our GHG modeling process. AB 1493 states that global warming is a matter of increasing concern for the public health and environment in California. It cites several risks that California faces from climate change, including reductions in the State's water supply, increased air pollution caused by higher temperatures, harm to agriculture, an increase in wildfires, damage to the coastline, and economic losses caused by higher food costs, water and energy costs, and insurance prices. The California legislature believes that technological solutions to reduce GHG emissions would stimulate California's economy and provide jobs.

The Global Warming Solutions Act has three main parts: (1) emissions reporting requirements, (2) adoption of enforceable emission limits, and (3) development of the State scoping plan.

- Emissions Reporting: CARB is required to adopt regulations for reporting and verification of emissions by January 1, 2008. Under the Act, any entity that has voluntarily participated in the emissions reporting program of the California Climate Action Registry by December 31, 2006, will be grandfathered under that program and will not be required to "significantly alter" its program when new or different requirements are later adopted by CARB. In addition, companies will receive "early action" credit for their efforts after specific emission reduction regulations are implemented.

- Enforceable Emissions Limits: By January 1, 2008, CARB is required to determine what California's statewide greenhouse gas emission level was in 1990, and to approve that level as the statewide limit that will be achieved by 2020. While the bill does not specify the 1990 level, lawmakers supporting the bill have claimed that this will result in a 25% reduction from current emissions. Before these levels are

set, the Board must hold at least one public workshop and provide an "opportunity for all interested parties to comment."

With respect to individual sources, by June 30, 2007, CARB will publish a list of discrete "early action" greenhouse gas emission reduction measures that can be implemented within the next three years. Formal regulations adopting those early action measures must be promulgated by January 1, 2010, and must be enforceable as of that date. All of the Regional Transportation Plans (RTPs) in the San Joaquin Valley must be prepared and adopted by May 31, 2007, considering federal deadlines established by the Federal Highway Administration (FHWA). FHWA's deadlines were made in consultation with CARB and the U.S. Environmental Protection Agency (EPA).

- Development of the State Plan: Following the initial publication of the early action measures, the Act directs CARB to develop a "scoping plan" by January 1, 2009, to achieve the maximum technologically feasible and cost-effective reductions in greenhouse gas emissions from specific sources or categories of sources by 2020. To develop the plan, CARB must consult with agencies with authority over greenhouse gas emissions (including the California Public Utilities Commission (PUC) and California Energy Commission (CEC), conduct public workshops, and consider economic and non-economic costs and benefits of any proposed programs. In addition, CARB must convene both an Environmental Justice Advisory Committee and an Economic and Technology Advancement Advisory Committee to assist in the development and implementation of the plan. The Economic and Technology Advancement Committee will be dedicated to identifying investment and funding opportunities for research and development of technologies that will help reduce greenhouse gases.

  The Act describes numerous other factors that must be considered in the development of the scoping plan, including national and international practices for greenhouse gas emissions reduction, effectiveness of voluntary reduction practices, relative emission contributions of various sources, and potential effects on small businesses.

After the scoping plan is published, CARB is directed to implement the identified emissions reduction measures through formal regulation before January 1, 2011; the regulations will go into effect one year later. Like the provision describing the various issues that must be considered in development of the scoping plan, the emissions reduction regulations must also consider a list of potential impacts on California's economy and the public health. Notably, the act permits the 2011 regulations to include market-based declining annual aggregate emissions limits beginning in 2012. In other words, CARB is authorized to create a regulatory mechanism for a cap-and-trade program. Any market-based program must be designed not to increase emissions of criteria air pollutants and must consider localized and cumulative emissions impacts.

In response to industry's concern about the inflexibility of the reduction to 1990 levels, the Act includes an economic "safety valve," which allows the Governor to suspend the emission reduction measures for one year in the event of "extraordinary circumstances, catastrophic events or the threat of extreme economic disruption." The Act also explicitly states that the authority of the California PUC is not affected by the Act.

In summary, the Act will create a new regulatory program intended to reduce statewide greenhouse gas emissions to their 1990 level. It is not yet clear how, or if, these future regulations would affect local governments or how they might influence local land use planning decisions.

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 (CO2), according to the CEC, and is responsible for approximately 2% of the world's CO2 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 the natural environment in California 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; and
- 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.

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. 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.

Similar changes would also occur in other parts of the world with regional variations in resources affected and vulnerability to adverse effects. According to the CEC, GHG emissions in California are attributable to human activities associated with industrial/manufacturing, utilities, transportation, residential, and agricultural sectors, as well as natural processes. Transportation is responsible for 41% of the state's GHG emissions, followed by the industrial sector (23%), electricity generation (20%), agriculture and forestry (8%) and other sources (8%). Emissions of carbon dioxide (CO_2) 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 CO_2 include uptake by vegetation and dissolution into the ocean.

A subsection is added as Section 3.3.4 Global Warming to address project impacts in terms of global warming. This subsection will address impacts resulting from a comparison of the Project to the No Project. The subsection will be added to page 3-36.

3.3.4 Global Warming Impacts

From the background discussion above, it is clear that the issue of greenhouse gas reductions extends well beyond the scope of regional government actions incorporated in RTPs without the development of tools to assess GHG emissions, which will come at a later date. Nevertheless, Kern COG recognizes the importance of this issue. Goals and policies already incorporated into the RTP will serve to reduce vehicle trip generation.

Determining what the contribution of GHG emissions might be resulting from the Project is infeasible given the inability to specifically calculate emissions consistent with an accepted methodology. However, Kern COG has compared the Project CO_2 emissions to emissions that would result from the No Project Alternative. The No Project Alternative reflects the existing or currently adopted 2004 RTP. The results of the comparison between the Project and the No Project Alternative are presented in Tables 3-8D and 3-8E below. Table 3-8D provides emission estimates for CO_2 using the California Mobile Source Emission Inventory (Emission Factors) model or EMFAC. The results indicate that CO_2 emissions resulting from the Project will be the same as emissions expected from the No Project Alternative. Table 3-8E provides results from the RTP Air Quality Conformity Analysis prepared for the Project (reference Table 3-8E below and included as Table 3-8 in the Draft EIR), for criteria pollutants including NO_X. The results indicate that emissions will be reduced between 2008 and 2030 as RTP projects are constructed.

Table 3-8D

Future CO_2 Emissions (Tons Per Day)

Scenarios	CO_2
Project Alternative (2030)	22.00
No Project Alternative (2030)	22.00
Difference	0.00
% Change	0.00%

Table 3-8E

Conformity Results for RTP Projects
EMFAC Results Summary -- KERN (SJV)

Pollutant	Scenario	Emissions Total (tons/day)	DID YOU PASS?	
		CO	CO	
	2010 Budget	180		
			2008 Budget	2010 Budget
Carbon Monoxide	2010	**112.93**	**YES**	**YES**
	2018 Budget	180		
	2018	**68.3**		
	2020	**57.2**	**YES**	**YES**
	2030	**41.58**	**YES**	**YES**
		ROG **NOx**	**ROG**	**NOx**
	2008 Budget	11.5 32.7		
	2008	**11.5** **32.6**	**YES**	**YES**
Ozone	2010 Budget	9.6 27.2		
	2010	**9.6** **27.0**	**YES**	**YES**
	2013	**7.9** **20.6**	**YES**	**YES**
	2020	**5.6** **11.3**	**YES**	**YES**
	2030	**4.2** **7.2**	**YES**	**YES**

Conformity Results for RTP Projects
EMFAC Results Summary -- KERN (Mojave Desert)

Pollutant	Scenario	Emissions Total (tons/day)		DID YOU PASS?	
		ROG	**NOx**	**ROG**	**NOx**
	2005 Budget	3.9	7.1		
	2009	**2.4**	**4.8**	**YES**	**YES**
Ozone					
	2015 Budget	2.1	4.0		
	2015	1.6	3.0	**YES**	**YES**
	2020	1.2	2.2	**YES**	**YES**
	2030	**1.0**	**1.5**	**YES**	**YES**

Mitigation Measures – Global Warming

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 2007 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 2007 RTP is designed to complement, rather than change, the plans adopted by the local agencies. Thus, the ultimate effect of the 2007 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 Final 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 2007 RTP compared to the current RTP (adopted in 2004). 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. According to Sunne Wright McPeak, former State Secretary of the Business, Housing, and Transportation Agency, 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 will identify 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 Blueprint is expected to be completed in Fall 2008.

Further, public transit over the next 20 years has been enhanced in the 2007 RTP over existing conditions and even when compared to the current RTP (adopted in 2004). 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 2007 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 2007 RTP.

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 GHG emissions. To ensure that individual project or improvement impacts are reduced to level of insignificance, mitigation measures described above have been included.

The following section would be added to Chapter 4, Section 4.2.3 (first bullet – Air Quality):

The VMT Reduction Alternative relies on results of major studies (referenced previously) that have yet to be completed within the County. Study results are needed to identify the specific types of transit improvements, land use changes needed to support transit systems, and funding required to enhance public transit systems and major transit corridors.

Transit planning methodology to evaluate new or enhanced systems, programs or projects was conducted differently in the past. In the past, planning studies focused on transportation and land use policies contained in the general plans of local agencies. Now, public transit planning is conducted by Kern COG and local transit agencies to determine the most viable and desirable transit systems. Studies such as those referenced in the RTP will consider what land use changes will be required to support enhanced transit use, and the types of systems that can be supported, including an assessment of costs and a financing program to implement study recommendations. It is important to identify the costs of enhanced transit improvements and the funding programs that would be required because the RTP must be "financially constrained" in accordance with federal and State RTP Guidelines and requirements. Furthermore, a shift in funding from other modes to enhanced transit services requires "buy-in" from the local agencies. If the local agencies do "buy-in" to enhanced transit systems and a shift in funding to such programs and improvements, then their general plans will need to be revised to support the land use patterns that can accommodate and sustain such services. This is important because the RTP Guidelines also require that the RTP plans and programs be consistent with local agency general plans. Referencing Page 9 of the RTP Guidelines (as amended in December 1999), "The RTPAs should be certain that the RTP and the circulation elements of the general plans within their region are consistent. The RTPs should also be consistent with Regional Transportation Plans in adjacent regions."

Air quality is a significant issue in Kern County and in the San Joaquin Valley. The preferred Alternative or the 2007 RTP provides a positive Air Quality Conformity Finding indicating reduction in criteria emissions. It is not possible to quantitatively assess the VMT Reduction Alternative at this time because transit studies

(referenced previously) are required to identify potential improvements and resulting VMT and vehicle trip reductions. Such studies have not been concluded or approved by the local agencies for implementation. Furthermore, the RTP EIR is required to evaluate the impacts of the Project, not to hypothesize about what the benefits or impacts of a different set of transportation improvements might be; especially when specific transit projects are not known at this time. No measuring stick is available at this time to quantify the benefits or disadvantages of shifting transportation funds from streets and highways to enhanced transit programs.

Mitigation Measure 3.3.1 on Page 3-32 will be revised by adding the following bullet: "Individual improvement projects will be analyzed by local agencies and Caltrans to identify whether Hazardous Air Pollutants (HAPs) would pose a risk to human health."

Mitigation Measure 3.3.1 on Page 3-32 will be revised by adding the following statement at the beginning of the Mitigation Measure: Compliance with Regulation VIII, Rules 8011-8081 will be required by CARB for this EIR.

Mitigation Measure 3.7.1 on Page 3-92 will be revised by amending to the following statement at the beginning of the Mitigation Measure: Compliance with Rule 4002 will be required by CARB for this EIR. As such, prior to any demolition activity, an asbestos survey of existing structures on the project site may be required to identify the presence of asbestos containing building material (ACBM). In accordance with CAL-OSHA requirements, a certified asbestos contractor must remove any identified ACBM having the potential for disturbance.

Mitigation Measure 3.3.1 on Page 3-32 will be revised by adding the following statement at the beginning of the Mitigation Measure: Compliance with Rule 4102 will be required by CARB for this EIR.

Mitigation Measure 3.3.1 on Page 3-32 will be revised by adding the following bullets:

- Limit area subject to excavation, grading, and other construction activity at any one time.
- Limit the hours of operation of heavy duty equipment and/or the amount of equipment in use.
- Replace fossil-fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set)
- Require that all diesel engines be shut off when not in use to reduce emissions from idling.
- Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing of construction activity during the peak hour of vehicular traffic on adjacent roadways, and "Spare the Air Days" declared by the District.
- Implement activity management (May through October), lengthen the construction period to minimize the number of vehicles and equipment operating at the same time.
- Off road trucks should be equipped with on-road engines when possible.
- Minimize obstruction of traffic on adjacent roadways.

4.0 MITIGATION MONITORING PROGRAM

4.1 STATUTORY REQUIREMENT

This Mitigation Monitoring Program for the Kern COG 2007 Revision of the Destination 2030 Regional Transportation Plan 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 2007 Revision of the Destination 2030 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 EIR 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 EIRs.

Regular review and update of the 2007 Revision of the Destination 2030 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.

4.2 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 EIRs;
- Identification of Responsible Party;
- Description of mitigation measure timing; and
- Identification of monitoring agency.

This Mitigation Monitoring Program shall be maintained in the Kern Council of Governments files for the Kern COG 2007 Revision of the Destination 2030 Regional Transportation Plan.

4.3 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 the mitigation measures.

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

    - 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.

    - 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.

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.

    - 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.

    - 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.

- 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} 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;
- Use of newer construction equipment, use of cleaner fuel types, engine modifications, or use of exhaust after-treatment devices;
- Projects will be analyzed to identify whether Hazardous Air Pollutants (HAPs) would pose a risk to human health;
- Limit area subject to excavation, grading, and other construction activity at any one time;
- Limit the hours of operation of heavy duty equipment and/or the amount of equipment in use;
- Replace fossil-fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set);
- Require that all diesel engines be shut off when not in use to reduce emissions from idling;
- Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing of construction activity during the peak hour of vehicular traffic on adjacent roadways, and "Spare the Air Days" declared by the District;
- Implement activity management (May through October), lengthen the construction period to minimize the number of vehicles and equipment operating at the same time;
- Off road trucks should be equipped with on-road engines when possible; and
- Minimize obstruction of traffic on adjacent roadways.

- 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 Destination 2030 RTP and other plans and programs.

4. Mitigation Measures – Global Warming

   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 2007 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 2007 RTP is designed to complement, rather than change, the plans adopted by the local agencies. Thus, the ultimate effect of the 2007 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 Final 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 2007 RTP compared to the current RTP (adopted in 2004). 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. According to Sunne Wright McPeak, former State Secretary of the Business, Housing, and Transportation Agency, 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 will identify 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 Blueprint is expected to be completed in Fall 2008.

Further, public transit over the next 20 years has been enhanced in the 2007 RTP over existing conditions and even when compared to the current RTP (adopted in 2004). 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 2007 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 2007 RTP.

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.

    - 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 and sensitive species during the individual improvement project design phase.

    - Focused sensitive plant and wildlife species 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 surveys will be conducted during the appropriate flowering season for sensitive plant species with the potential to occur within the individual improvement project area.

- If sensitive plant or wildlife species 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, silt fencing, exclusion fencing and/or appropriate compensation where impacts cannot be fully avoided.

- Locations of sensitive species and sensitive 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 or wildlife species 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 abandon the nest.

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.

   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

3.5 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.

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

3.6 Mitigation

1. 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).

2. 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.

3. 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.

4. Design features will include measures to reduce erosion from storm water.

5. Road cuts will be designed to maximize the potential for revegetation.

6. Implementing agencies will ensure that projects avoid landslide areas and potentially unstable slopes wherever feasible.

7. Where practicable, routes and individual improvement project designs that would permanently alter unique geologic features will be avoided.

8. Implementing agencies will ensure that geotechnical investigations are conducted by a qualified geologist to identify the potential for subsidence and expansive soils.

9. Recommended corrective measures, such as structural reinforcement and replacing soil with engineered fill, will be implemented in individual improvement project designs.

10. 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.

11. Individual improvement project structures will be constructed by responsible agencies to the seismic standards contained in the most recent edition of the Uniform Building Code (UBC).

12. 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.

13. 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.

14. 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.

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

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

3.8 Mitigation

1. 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. 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.

3. 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.

4. 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.

5. 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.

6. 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.

7. 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.

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

3.9 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.

2. 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.

3. 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.

4. 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.

   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

3.10 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, 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.

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

3.11 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.

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

3.12 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. 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.

5. 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.

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

3.13 Mitigation

1. Measures intended to reduce vehicle miles traveled and reduce congestion are part of the 2030 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 Destination 2030 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 measures. Kern COG will be provided with documentation indicating compliance with mitigation measures.

3. 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.

5.0 STATEMENT OF OVERRIDING CONSIDERATIONS

5.1 SUMMARY OF SIGNIFICANT, ADVERSE, UNAVOIDABLE IMPACTS

Kern COG has prepared a mitigation monitoring program for the Kern COG 2007 Revision of the Destination 2030 Regional Transportation Plan Draft and Final Environmental Impact Report (EIR) 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 EIRs. 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 EIRs identify the following significant, adverse, and unavoidable environmental impacts:

- Impact 3.1.1: Construction and implementation of individual improvement 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 individual improvement projects could alter the appearance of scenic resources.

- Impact 3.1.3: Construction and implementation of individual improvement projects could create significant contrasts with the overall visual character of the existing landscape setting.

- Impact 3.1.4: Construction and implementation of individual improvement 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 3.2.1: 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 3.2.2: Implementation of the proposed individual improvement projects could potentially result in the disturbance or loss of significant agricultural resources throughout the Kern region.

- Impact 3.3.3: 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.

- Impact 3.4.1: Individual improvement projects 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: Individual improvement projects 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: Individual improvement projects 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: Individual improvement projects would result in temporary and permanent impacts to terrestrial and aquatic wildlife movement.

- Impact 3.5.1: Cultural resources may be encountered during development of individual improvement projects proposed in the Destination 2030 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 3.6.1: Seismic events can damage transportation infrastructure through ground shaking, liquefaction, surface rupture and landslides.

- Impact 3.6.2: Some individual improvement projects require significant earthwork, increasing potential slope failure and long-term erosion. Earthwork can also alter unique geologic features.

- Impact 3.6.5: 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 individual transportation improvement projects.

- Impact 3.6.6: Construction and implementation of the individual improvement projects included in the RTP could alter the appearance of scenic resources.

- Impact 3.9.1: Individual improvement 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 3.9.2: 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 individual improvement projects could be impacted by construction and implementation of the proposed highway, arterial and transit projects.

- Impact 3.9.3: Construction and implementation of individual improvement 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 3.9.4: Implementation of the proposed RTP combined with projects and programs contained in the Destination 2030 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 individual highway, arterial and transit improvement projects proposed under the RTP could potentially result in the disturbance or loss of some of these designated areas. Specifically, new individual improvement projects involving construction would be most likely to result in impacts to these areas.

- Impact 3.10.1: Grading and construction activities associated with the proposed individual highway, arterial, and transit improvement 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.

- Impact 3.11.1: 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 3.11.2: The individual improvement projects have the potential to disrupt or divide a community by separating community facilities, restricting community access and eliminating community amenities.

- Impact 3.13.1: 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 2030 levels of service would still include a number of segments that will operate at deficient levels or at LOS E and F.

- Impact 3.13.3 – Individual improvement projects may increase traffic volumes not only on streets and highways, but also at at-grade highway-rail crossings.

5.2 OVERRIDING CONSIDERATIONS

Kern COG is required to prepare this Statement of Overriding Considerations to explain the reasons for approving the Destination 2030 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 Destination 2030 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" (2004 Destination 2030 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 Destination 2030 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 Destination 2030 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 Destination 2030 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 Destination 2030 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 Destination 2030 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 Destination 2030 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 EIRs. First, the individual improvement projects identified in the Destination 2030 RTP are required to meet travel demand of residents and businesses through to the year 2030. 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 EIRs.

Addendum Environmental Impact Report

Certification of the 2007 Kern COG Destination 2030 Regional Transportation Plan Environmental Impact Report (EIR) and Addendum EIR

as the EIR for the
Proposed 2007 Destination 2030
Regional Transportation Plan Amendment

January 2009

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Certification of the 2007 Destination 2030 Regional Transportation Plan Environmental Impact Report (EIR) and Addendum EIR as the EIR for the Proposed 2007 Destination 2030 Regional Transportation Plan Amendment

May 6, 2008

INTRODUCTION

Kern Council of Governments (Kern COG) has prepared an amendment to the 2007 Destination 2030 Regional Transportation Plan (2007 RTP). The 2007 RTP, adopted on May 17, 2007 by Kern COG, did not include a complete year of expenditure dollars for revenues and costs; therefore, amendment of the 2007 RTP is required. Changes to projects are addressed in the 2007 RTP Amendment and satisfy the year of expenditure requirements including the calculation of Year of Expenditure (YOE) and total project costs, which have been adjusted to a 3-percent per year rate of inflation. These changes account for reductions in State Transportation Improvement Program (STIP) formula funding and adjustments to near-term programming. The changes also anticipate regional projects in the 2009 FTIP. In the absence of a local "self-help" sales tax in Kern County, impact fee assumptions remain as previously stated in the 2007 RTP.

This document, prepared pursuant to the California Environmental Quality Act (CEQA), Public Resources Code 21000 *et seq*., constitutes an Addendum to the 2007 Destination 2030 Regional Transportation Plan EIR (2007 RTP EIR) prepared and certified on May 17, 2007 for the 2007 RTP, and proposes that the certified 2007 EIR serves as the EIR for the proposed 2007 RTP Amendment (project). This Addendum outlines the changes to the project, as analyzed in the 2007 EIR, and evaluates whether those changes, or new information or changed circumstances, would require substantial changes to the impacts identified or mitigation measures proposed. The proposed project to amend the 2007 RTP does not create any new significant adverse environmental impacts outside of the scope of the analyses already contained in the previously certified 2007 RTP EIR. Since the current proposed project would not generate any new significant adverse environmental impacts or make any existing significant impacts substantially worse, an Addendum to the 2007 RTP EIR has been prepared. The 2007 RTP and 2007 RTP EIR can be found at www.kerncog.org and are on file at Kern COG offices.

CEQA PROVISIONS

As a part of Kern COG's current review of the RTP, it is necessary to address any areas of the 2007 RTP EIR that might be substantially impacted by changes in projects or policy direction. Section 15162 in 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 to the previously prepared EIR 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 to the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;

- "New information of substantial importance becomes available which shows new significant effects or significant effects substantially more severe than previously discussed, or which shows that mitigation measures or alternatives previously found not to be feasible or that are substantially different from those analyzed in the EIR would substantially reduce one or more significant effects on the environment:"
  - 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 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; 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.

PROJECT DESCRIPTION

2007 Destination 2030 Regional Transportation Plan and EIR

The 2007 RTP is a planning guide containing transportation policy and projects for a 22 year period (through Fiscal Year 2029/30). The Plan includes programs and policies for congestion management, transit, bicycles and pedestrians, roadways, freight, and financing.

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. Different jurisdictions have different transportation implementation responsibilities under the Plan. These jurisdictions include Caltrans, County of Kern, and the eleven incorporated cities. The RTP addresses effects of planned growth and development on the existing and planned transportation system and the resultant analysis documents existing and future year (Year 2029/30) multimodal transportation system conditions. Modes studied include highways and arterials, public transit, aviation non-motorized systems, passenger and freight rail, goods movement, congestion management, and Intelligent Transportation Systems (ITS).

The process to approve the 2007 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 2007 EIR by Kern COG, and (3) approval of a resolution passed by Kern COG approving the 2007 RTP. Public involvement was encouraged throughout the 2007 RTP development process.

The 2007 RTP consists of required elements and is organized into various chapters. A description of each Chapter for the RTP follows.

- Chapter 1. Executive Summary;
- Chapter 2. Transportation Planning Policies;
- Chapter 3. Planning Assumptions;
- Chapter 4. Strategic Planning Investments;
- Chapter 5. Financing Transportation;
- Chapter 6. Environmental Justice;
- Chapter 7. Future Links;
- Chapter 8. Monitoring Progress;

- Chapter 9. References; and
- Appendices.

The RTP, in conjunction with General Plan Circulation Elements adopted by the County and the cities, designates the location and scale of existing and proposed transportation systems. The financing program contained in the 2007 RTP considered a projection of funding sources that may be available to finance transportation improvement projects over time. The projection of funds was accomplished considering historical allocations of federal, state and other funding.

To evaluate the regional impacts associated with the 2007 RTP, a Program Environmental Impact Report 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 has been determined that the obligation to prepare a Subsequent EIR was not met and that this Addendum is the appropriate environmental document to address the 2007 RTP Amendment.

Amendment to the 2007 RTP

The 2007 RTP did not include a complete year of expenditure dollars for revenues and costs; therefore, amendment of the 2007 RTP is required. Tables 1 and 2 and Figures 1 through 5 reflect changes to financially constrained and unconstrained projects addressed in the 2007 RTP Amendment and satisfy the year of expenditure requirements including the calculation of Year of Expenditure (YOE) and total project costs, which have been adjusted to a 3-percent per year rate of inflation. Tables 1 and 2 replace Tables 4.1 and 4.2 in the 2007 RTP. These changes account for reductions in State Transportation Improvement Program (STIP) formula funding and adjustments to near-term programming. The changes also anticipate regional projects in the 2009 FTIP. In the absence of a local "self-help" sales tax in Kern County, impact fee assumptions remain as previously stated in the 2007 Destination 2030 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 EIR prepared for the 2007 RTP, therefore, represents the culmination of all environmentally related issues raised during the comment period on the Draft EIR. In addition, the Final EIR 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 EIR are implemented.

The Final EIR 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, May 17, 2007; and
- 2007 Destination 2030 RTP, Final EIR, Mitigation Monitoring and Reporting Program, and Statement of Overriding Considerations, May 17, 2007.

The summary of mitigation measures and the mitigation monitoring program identified beginning on Page 20 remain applicable considering changes reflected in this Addendum EIR.

TABLE 1
Constrained Program of Projects
2007 through 2010 - Major Highway Improvements

Project	Location	Scope	YOE Cost	Project ID	Start	Constructed
Allen Road	Metro Bkfd	Brimhall Rd to Stockdale Hwy - widen to six lanes	$ 7,000,000	KER08RTP081	2010	2012
W Ridgecrest Blvd	Ridgecrest	Mahan St to China Lake Blvd - widen to four lanes	$ 10,200,000	KER08RTP001	2010	2012
Challenger Dr. Ext.	Tehachapi	Extend from Viena St to Dennison Rd - construct new street	$ 1,500,000	KER08RTP015	2010	2012
I-5	Kern	Interchange improvements at Laval Rd	$ 11,300,000	KER08RTP002	2009	2011
Route 46	Wasco	SLO County Line to Brown Material Road - widen to four lanes	$ 232,070,000	KER08RTP003	2009	2011
Westside Parkway	Metro Bkfd	SR 99 / Oak St to Heath Rd - construct local freeway	$ 377,000,000	KER08RTP004	2009	2011
7th Standard Rd	Shafter	Santa Fe Way to Coffee Rd - widen to four/six lanes	$ 57,000,000	KER08RTP005	2009	2011
		Sub-total	$ 696,070,000			

2011 through 2015 - Major Highway Improvements

Project	Location	Scope	Inflated Cost	Project ID	Start	Constructed
Route 14	Inyokern	Redrock / Inyokern Rd to Rt 178 - widen to four lanes (Phase1)	$ 42,000,000	KER08RTP006	2014	2016
Route 58	Metro Bkfd	Rosedale Hwy - Allen Road to SR 99 - widen to six lanes	$ 44,000,000	KER08RTP007	2011	2013
Route 99	Metro Bkfd	Hosking Road - construct interchange	$ 60,000,000	KER08RTP009	2010	2012
Route 178	Bakersfield	Morning Dr to Canteria - new interchange widen to four/six lanes	$ 86,000,000	KER08RTP010	2012	2014
Route 178	Bakersfield	Vineland to Miramonte Rd - widen to four/six lanes	$ 13,000,000	KER08RTP011	2011	2014
Oak St/24th Street	Bakersfield	Rt 178/24th St and Oak St - construct improvements	$ 56,000,000	KER08RTP012	2012	2014
Route 58	Bakersfield	Rt 99 to Cottonwood Rd. - widen to six lanes	$ 50,000,000	KER08RTP019	2015	2017
Centennial Corridor	Bakersfield	Westside Parkway to SR58 interchange-Bakersfield	$ 650,000,000	KER08RTP020	2015	2017
Hageman Extension	Bakersfield	Knudsen Dr to Rt 204/Golden State - construct four lane ext	$ 85,000,000	KER08RTP013	2012	2014
24th/23rd Street	Bakersfield	Rt 178/SR 99 to M St - widen to four/six/eight lanes	$ 25,000,000	KER08RTP014	2013	2015
West Beltway	Metro Bkfd	Rosedale Hwy to Pacheco Rd - construct four/six lane facility	$ 170,000,000	KER08RTP016	2014	2017
		Sub-total	$ 1,281,000,000			

2016 through 2020 - Major Highway Improvements

Project	Location	Scope	Inflated Cost	Project ID	Start	Constructed
Route 14	Inyokern	Redrock / Inyokern Rd to Rt 178 - widen to four lanes (Phase 2)	$ 42,000,000	KER08RTP017	2018	2020
		Sub-total	$ 42,000,000			

TABLE 1 (Cont.)

Constrained Program of Projects

2021 through 2025 - Major Highway Improvements

Project	Location	Scope	Inflated Cost	Project ID	Start	Constructed
Route 14	Inyokern	Redrock / Inyokern Rd to Rt 178 - widen to four lanes (Phase 3)	$ 32,000,000	KER08RTP024	2022	2024
Route 119	Taft	Cherry Ave to County Rd - construct bypass (Phase 1)	$ 115,000,000	KER08RTP022	2022	2024
US 395	Ridgecrest	Route 178 and Bowman Rd - Construct passing Lanes	$ 20,000,000	KER08RTP089	2022	2024
		Sub-total	$ 167,000,000			

2026 through 2030 - Major Highway Improvements

Project	Location	Scope	Inflated Cost	Project ID	Start	Constructed
Route 46	Lost Hills	SLO County Line to I-5 - interchange upgrade at I-5 (Phase 1)	$ 97,000,000	KER08RTP018	2026	2030
Route 178	Bakersfield	Vineland Interchange and widening to four lanes	$ 86,000,000	KER08RTP025	2028	2030
Route 178	Bakersfield	Existing west terminus to Oswell St - widen to eight lanes	$ 81,000,000	KER08RTP026	2026	2028
		Sub-total	$ 264,000,000			

Total Major Highway Improvements $ 2,450,070,000

TABLE 2

Unconstrained Program of Projects

Major Highway Improvements

Project	Location	Scope	YOE Cost	Project Id
2031 through 2035 - Major Highway Improvements				
Route 46	Wasco	Juniper Ave (North) to Rt 43 - widen to four lanes	$ 130,000,000	KER08RTP079
Route 46	Kern	Near Lost Hills at Interstate 5 - upgrade and widen interchange	$ 130,000,000	KER08RTP033
Route 58	Kern	Rosedale Highway - I-5 to Allen Rd - widen to four lanes	$ 90,000,000	KER08RTP038
Route 58	Tehachapi	Dennison Rd - construct interchange	$ 33,000,000	KER08RTP036
Route 99	Bakersfield	At Snow Road - construct new interchange	$ 108,000,000	KER08RTP008
Route 99	Bakersfield	At Olive Drive - Interchange reconstruction	$ 108,000,000	KER08RTP021
Route 119	Taft / Bakersfield	Elk Hills - from County Rd to Tupman Ave - widen to four lanes	$ 48,000,000	KER08RTP086
Route 178	Bakersfield	Miramontes Rd to Rancheria Rd - widen existing road to four / six lanes	$ 37,000,000	KER08RTP084
Route 178	Bakersfield	At SR 204 and 178 - reconstruction freeway ramps	$ 50,000,000	KER08RTP085
Route 204	Bakersfield	At F St and Golden State Ave - construct operational improvements	$ 70,000,000	KER08RTP081
Route 204	Bakersfield	(Golden State Ave) SR 99 to M St - construct operational improvements	$ 100,000,000	KER08RTP082
Route 204	Bakersfield	(Golden State Ave) from SR 99 to F St - widen to six lanes	$ 20,000,000	KER08RTP083
Route 184	Arvin	SR 223 to SR 178 - widen to four lanes	$ 102,000,000	KER08RTP045
US 395	Johannesburg	San Bdo County Line to SR 14 - widen to four lanes	$ 244,000,000	KER08RTP050
South Beltway	Bakersfield	I-5 to SR 58 - new expressway	$ 610,000,000	KER08RTP074
Cecil Ave.	Delano	Albany St to Browning Rd - widen to four lanes	$ 21,000,000	KER08RTP055

Project	Location	Scope	YOE Cost	Project Id
Beyond 2035 - Major Highway Improvements				
Interstate 5	Kern	From Fort Tejon to SR 99 - widen to ten lanes	$ 86,000,000	KER08RTP027
Interstate 5	Kern	7th Standard Rd Interchange - reconstruction	$ 54,000,000	KER08RTP028
Route 33	Maricopa	Welch St to Midway Rd - widen to four lanes	$ 88,000,000	KER08RTP029
Route 43	Shafter	7th Standard Rd to Euclid Ave - widen to four lanes	$ 37,000,000	KER08RTP030
Route 46	Wasco	I-5 to Juniper Ave - widen to four lanes	$ 118,000,000	KER08RTP031
Route 46	Wasco	SR 43 to SR 99 - widen to four lanes	$ 70,000,000	KER08RTP032
Route 58	Bakersfield	Near General Beale Rd - new truck weigh station	$ 11,000,000	KER08RTP034
Route 58	Kern/Tehachapi	East of Tehachapi to General Beale Rd - truck auxiliary lanes / escape ramp	$ 86,000,000	KER08RTP035
Route 58	Bakersfield	General Beale Rd - construct new interchange	$ 54,000,000	KER08RTP037
Route 65	Kern	Merl Haggard Dr to County Line - widen to four lanes	$ 216,000,000	KER08RTP039
Route 99	Bakersfield	Ming Ave to Bear Mountain Blvd - widen to eight lanes	$ 125,000,000	KER08RTP077
Route 99	Bakersfield	SR 204 to Seventh Standard Rd - widen to eight lanes	$ 125,000,000	KER08RTP080
Route 119	Taft	SR 33 to Cherry Ave - widen to four lanes	$ 54,000,000	KER08RTP040
Route 119	Taft	Tupman Rd to I-5 - widen to four lanes	$ 60,000,000	KER08RTP041
Route 155	Delano	SR 99 to Browning Rd - four lanes; reconstruct	$ 32,000,000	KER08RTP042
Route 166	Maricopa	Basic School Rd - reconstruct intersection grade	$ 517,582	KER08RTP043
Route 178	Bakersfield	Vineland to China Garden - new freeway	$ 500,000,000	KER08RTP044

TABLE 2 (Cont.)

Unconstrained Program of Projects

Project	Location	Scope	YOE Cost	Project Id
Beyond 2035 - Major Highway Improvements				
Route 184	Arvin	SR 223 to SR 178 - widen to four lanes	$ 102,000,000	KER08RTP045
Route 202	Tehachapi	Woodford-Tehachapi Rd to (Lower) Cummings Valley Rd - widen to four lane	$ 47,445,008	KER08RTP046
Route 202	Tehachapi	Tucker to Woodford-Tehachapi Rd - widen to four lane	$ 9,704,661	KER08RTP047
Route 223	Arvin	SR 99 to SR 184 - widen to four lanes	$ 69,010,921	KER08RTP048
Route 223	Arvin	From Arvin city limits to SR 58 - widen to four lanes	$ 64,697,738	KER08RTP049
US 395	Johannesburg	San Bdo County Line to SR 14 - widen to four lanes	$ 244,000,000	KER08RTP050
Santa Fe Way	Bakersfield	Hageman to Los Angeles Ave - widen to four lanes	$ 127,238,885	KER08RTP051
California City Blvd	California City	SR 14 east six miles - widen to four lanes	$ 22,000,000	KER08RTP052
Twenty Mule Team Rd	California City	California City Blvd to SR 58 - widen to four lanes	$ 21,565,913	KER08RTP053
North Gate Road	California City	California City Blvd to North Edwards - construct new four lane road	$ 60,384,555	KER08RTP054
Woolomes Ave.	Delano	SR 99 - widen bridge to four lanes; reconstruct ramps	$ 28,035,686	KER08RTP056
Garces Highway	Delano	Interstate 5 to SR 99 - widen to four lanes	$ 288,983,230	KER08RTP057
Red Apple Rd	Kern	Tucker Rd to Westwood Blvd - widen to four lanes	$ 4,313,183	KER08RTP058
Sierra Way	Kern	Lake Isabella at South Fork Bridge - reconstruct bridge	$ 51,758,190	KER08RTP059
Frazier Park	Kern	Park and Ride facility near Frazier Park Blvd	$ 12,939,548	KER08RTP060
Wheeler Ridge Rd	Kern	I-5 to SR 223 - widen to four lanes	$ 129,395,476	KER08RTP061
Rosamond Blvd	Kern	Rosamond Blvd at UP Railroad - grade separation	$ 32,348,869	KER08RTP062
K Street	Kern	Mojave - extend K St to SR 14	$ 12,939,548	KER08RTP063
Teh. Willow Springs Rd	Tehachapi	SR 58 to Rosamond Blvd - widen to four lanes	$ 150,961,389	KER08RTP064
Valley Blvd	Tehachapi	Tucker Rd to Curry - widen to four lanes	$ 23,722,504	KER08RTP065
Kern Ave.	McFarland	Reconstruct pedestrian bridge at SR 99	$ 5,391,470	KER08RTP066
Mahan St	Ridgecrest	Inyokern to South China Lake - widen to four lanes	$ 32,348,869	KER08RTP067
Richmond Rd	Ridgecrest	E Ridgecrest Blvd - widen to four lanes	$ 6,469,774	KER08RTP068
Bowman Rd	Ridgecrest	China Lake to County Line Rd - reconstruction	$ 4,313,183	KER08RTP069
S. China Lake Blvd	Ridgecrest	SR 395 to College Heights - reconstruction	$ 36,662,052	KER08RTP070
College Heights	Ridgecrest	China Lake Blvd to Jarvis - reconstruction	$ 36,662,052	KER08RTP071
7th Standard Rd	Shafter	I-5 to Santa Fe Way - widen to four lanes	$ 90,576,833	KER08RTP072
Zachary Rd	Shafter	7th Standard Rd to Lerdo Hwy - widen to four lanes	$ 34,505,460	KER08RTP073
East Beltway	Bakersfield	SR 58 to Morning Drive - construct new expressway	$ 200,000,000	KER08RTP078
West Beltway-South	South metro	Pacheco Rd to I-5 - extend freeway	$ 100,000,000	KER08RTP075
West Beltway-North	North metro	Rosedale Hwy to SR 99 -Extend freeway	$ 100,000,000	KER08RTP076

Sub-total $ 3,866,892,576

FIGURE 1

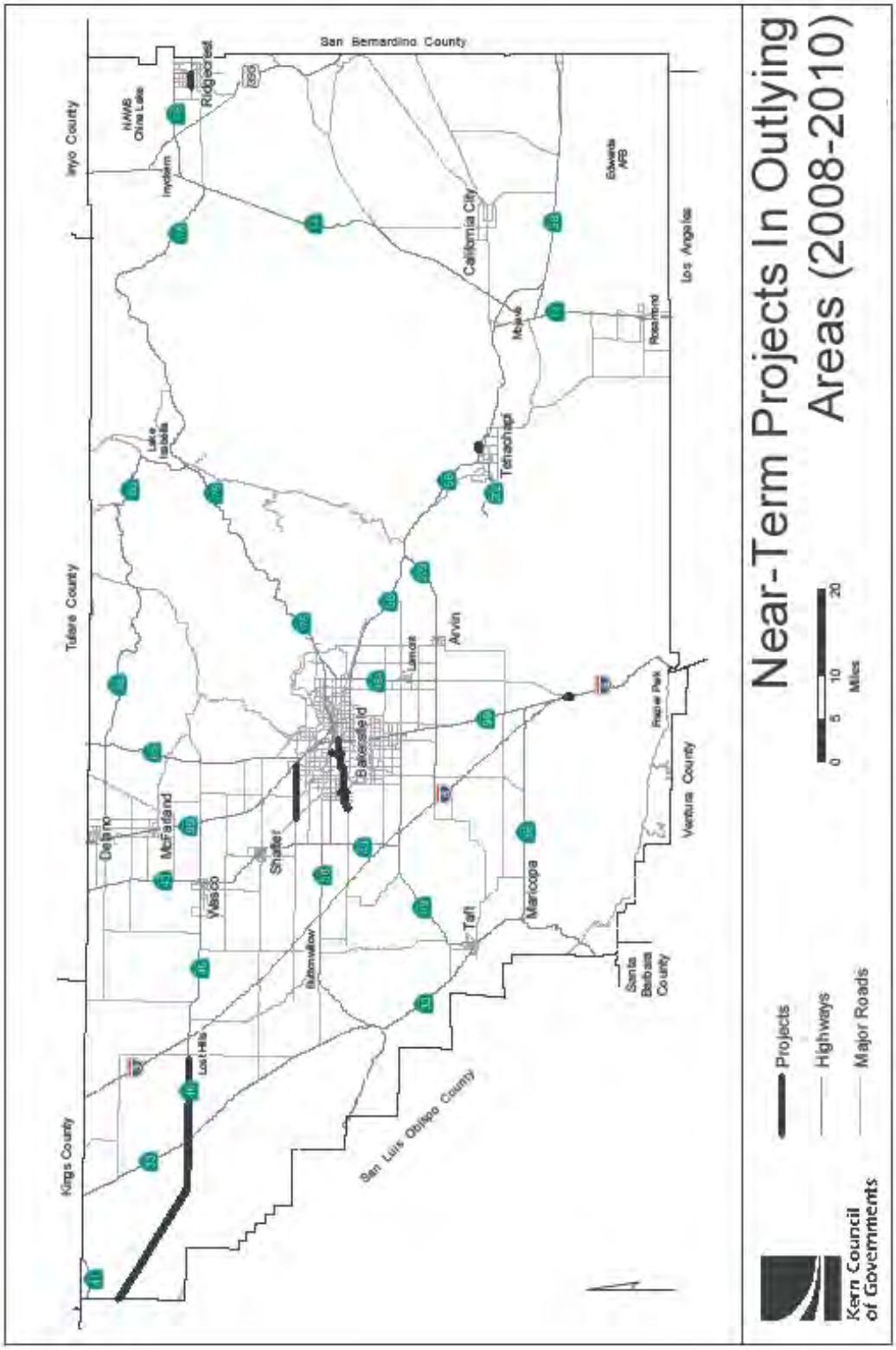

Near-Term Projects In Outlying Areas (2008-2010)
Projects
Highways
Major Roads
Miles
0
5
10
20
Kern Council of Governments
San Bernardino County
Inyo County
Tulare County
Kings County
San Luis Obispo County
Santa Barbara County
Ventura County
Los Angeles
Ridgecrest
NAWS China Lake
Inyokern
California City
Edwards AFB
Mojave
Rosamond
Lake Isabella
Tehachapi
Arvin
Lamont
Bakersfield
Rapid Park
Delano
McFarland
Shafter
Wasco
Buttonwillow
Taft
Maricopa
Lost Hills

FIGURE 2

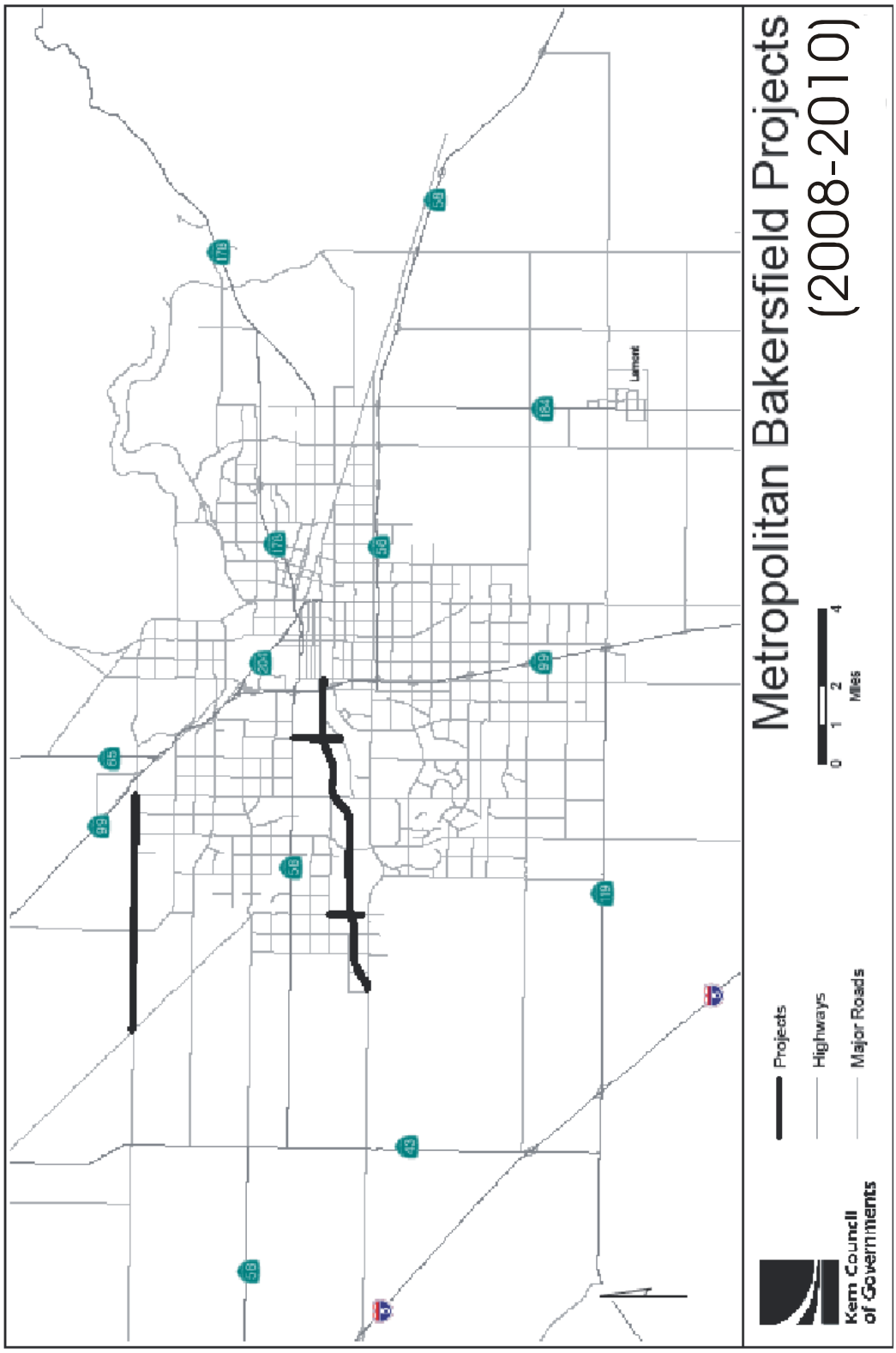

Metropolitan Bakersfield Projects
(2008-2010)
Projects
Highways
Major Roads
Kern Council of Governments
0 1 2 4
Miles
Lamont

FIGURE 3

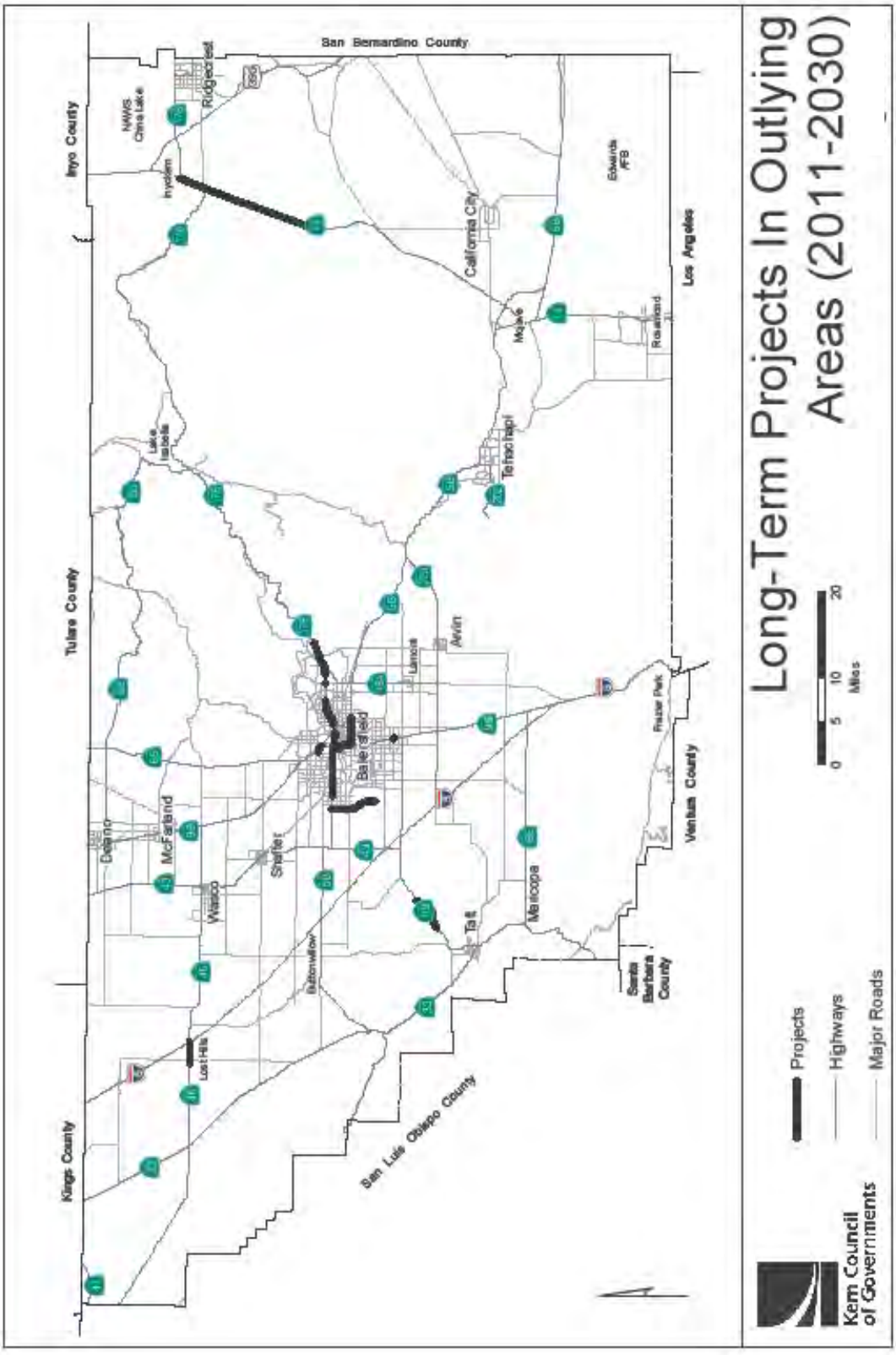

Long-Term Projects In Outlying Areas (2011-2030)
Projects
Highways
Major Roads
0 5 10 20
Miles
Kern Council of Governments
San Bernardino County
Inyo County
Tulare County
Kings County
San Luis Obispo County
Santa Barbara County
Ventura County
Los Angeles
Bakersfield
Arvin
Lamont
Edison
Shafter
Wasco
McFarland
Delano
Buttonwillow
Lost Hills
Taft
Maricopa
Fraser Park
California City
Mojave
Rosamond
Edwards AFB
Tehachapi
Lake Isabella
Inyokern
NAWS China Lake
Ridgecrest

FIGURE 4

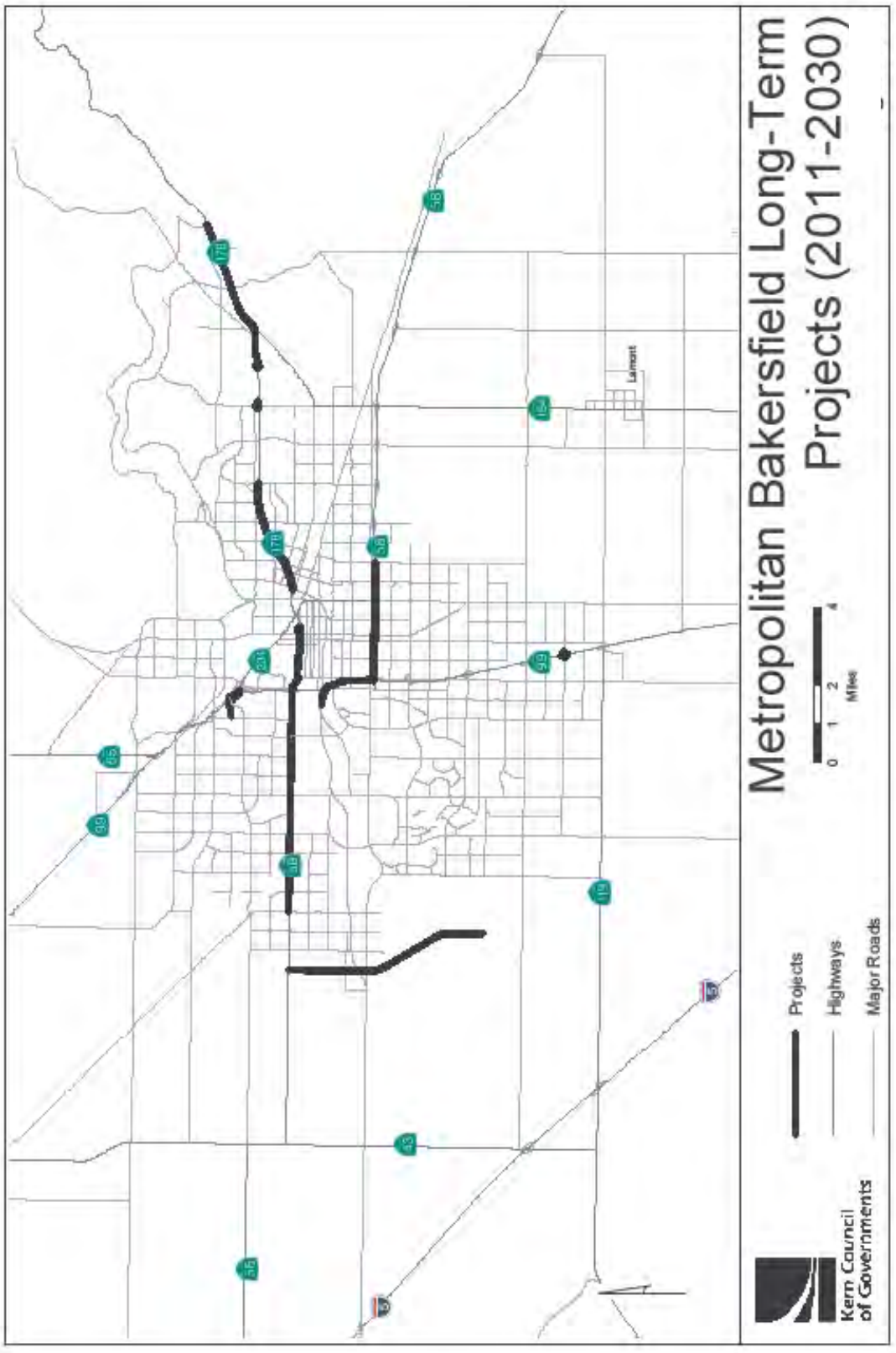
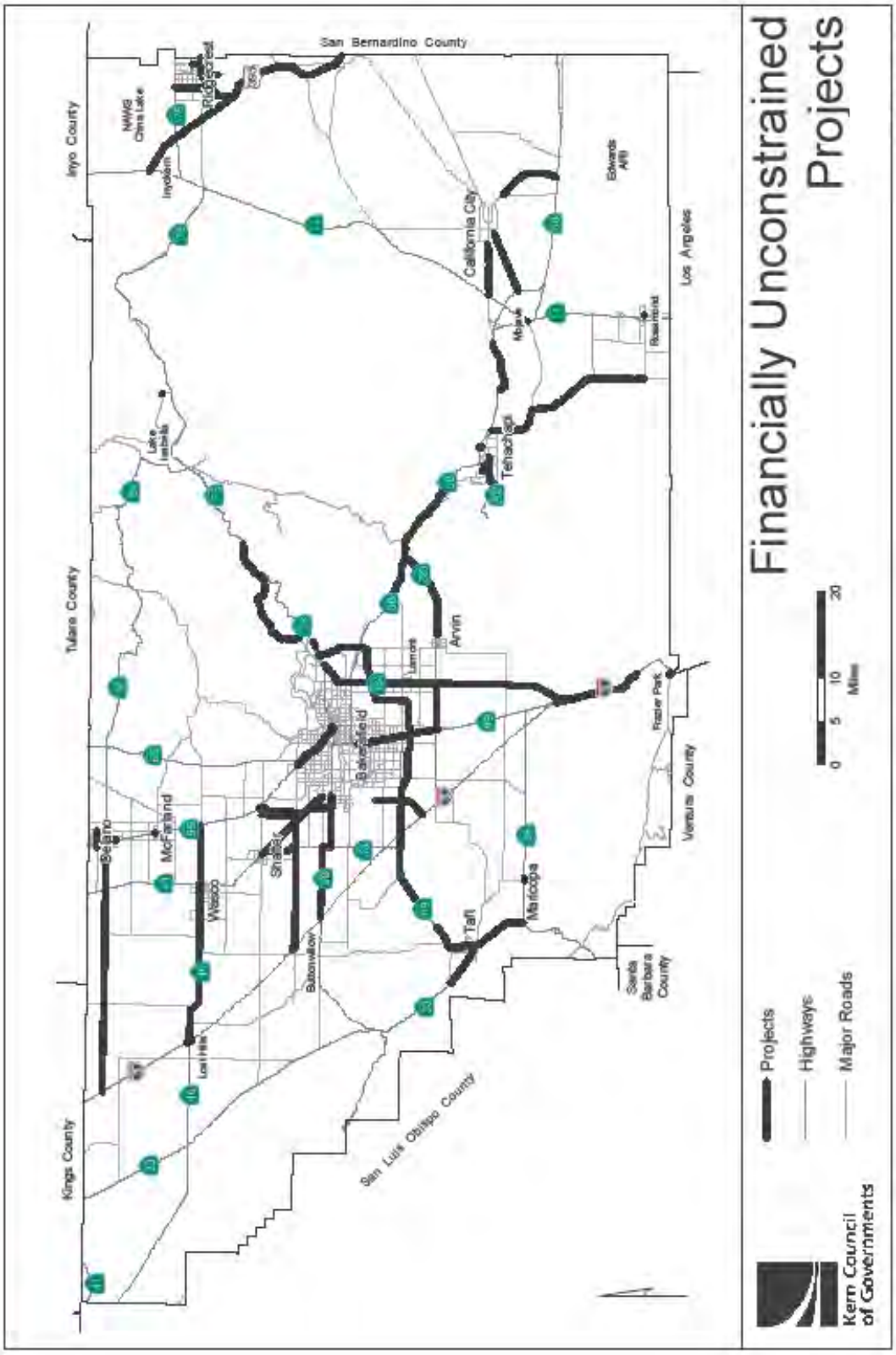

Metropolitan Bakersfield Long-Term Projects (2011-2030)
0 1 2 4
Miles
Projects
Highways
Major Roads
Kern Council of Governments
Lamont
178
58
65
99
43
5

FIGURE 5


Financially Unconstrained Projects
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
Bakersfield
Arvin
Lamont
Tehachapi
California City
Mojave
Rosamond
Edwards AFB
Lake Isabella
Shafter
Wasco
Buttonwillow
McFarland
Delano
Taft
Maricopa
Frazier Park
NWWS China Lake
Inyokern
Ridgecrest
0 5 10 20
Miles

CHANGES TO THE 2007 RTP

The purpose of this Addendum EIR is to reflect changes and additions to the previously certified 2007 RTP EIR. Considering CEQA provisions detailed previously, the 2007 RTP Amendment will:

- Not cause additional significant environmental effects addressed in the 2007 EIR other than those already identified;
- The effects referenced in the 2007 RTP EIR will not be substantially more severe as a result of changes identified in the 2007 RTP Amendment; and
- Mitigation measures contained in the 2007 RTP EIR would continue to be feasible and would reduce environmental effects of changes referenced in this Addendum EIR.

While the proposed changes to the 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 EIR, nor result in impacts that are substantially more severe than shown in the 2007 RTP EIR. Further justification to prepare this Addendum EIR is provided below.

Based upon the findings described above, the RTP Amendment will not require major revisions of the 2007 RTP EIR for the following reasons:

- Potential impacts and mitigation factors have been adequately addressed in the certified 2007 RTP EIR and reviewed in this Addendum EIR;
- Each individual transportation project referenced in the 2007 RTP and this Addendum EIR will be evaluated by the responsible local agency to identify potential environmental effects;
- After reviewing CEQA Section 15164, it has been determined that the obligation to prepare a Subsequent EIR is not met.

To further justify that changes reflected in the 2007 RTP Amendment will not cause additional environmental effects or require changes to mitigation measures contained in the 2007 RTP EIR, the following series of tables have been prepared.

Hours of Vehicular Travel

Table 3 provides an estimate of the total number of vehicle travel hours in Kern County for three regions (Bakersfield, rural areas of the County, and countywide). The table references total travel hours for Year 2030 resulting from the 2007 RTP and amended 2030 travel hours considering project changes reflected in Tables 1 and 2. As shown, changes to the 2007 RTP will result in a 3 percent increase in vehicle hours countywide, a 1 percent increase in rural areas of the County, and a 5 percent within Bakersfield. A 3 percent countywide increase in vehicles hours of travel is not considered significant.

TABLE 3
Total Hours of Travel

Average Travel Time

Table 4 provides an estimate of the total average travel time (in minutes) during peak periods along Kern County highways for each of the three regions described previously. The table references travel time for Year 2030 resulting from the 2007 RTP and amended 2030 travel time considering project changes reflected in Tables 1 and 2. As shown, changes to the 2007 RTP will result in a 4 percent increase in travel time during peak periods countywide, an 8 percent increase in rural areas of the County, and a 1 percent increase in Bakersfield. A 4 percent countywide increase in travel time during the peak periods is not considered significant.

TABLE 4
Average Travel Time - Peak Highway Trips (in minutes)

VMT and Daily Trips

Table 5 provides an estimate of the total countywide vehicle miles traveled (VMT) and daily trips. The table references VMT and daily trips for Year 2030 resulting from the 2007 RTP and amended 2030 VMT and daily trips considering project changes reflected in Tables 1 and 2. As shown, changes to the 2007 RTP will result in less than a 1 percent decrease in VMT and daily trips countywide. Reductions in VMT and daily trips as a result of the projects referenced in Tables 1 and 2 are considered positive impacts.

TABLE 5
Total Vehicle Miles Traveled (VMT) & Daily Trips

	2030	Amended 2030	Percent Change VMT/Daily Trips 2030 & Amended 2030
VMT	42,028,202	41,712,301	-0.75%
Daily Trips	3,493,871	3,492,975	-0.03%

Figures 6 and 7 identify the projected Level of Service (LOS) along the regional system of streets and highways within Kern County and in the Metropolitan Bakersfield area. These figures replace Figures 3-17 and 3-18 referenced in Section 3 of the 2007 RTP EIR.

FIGURE 6

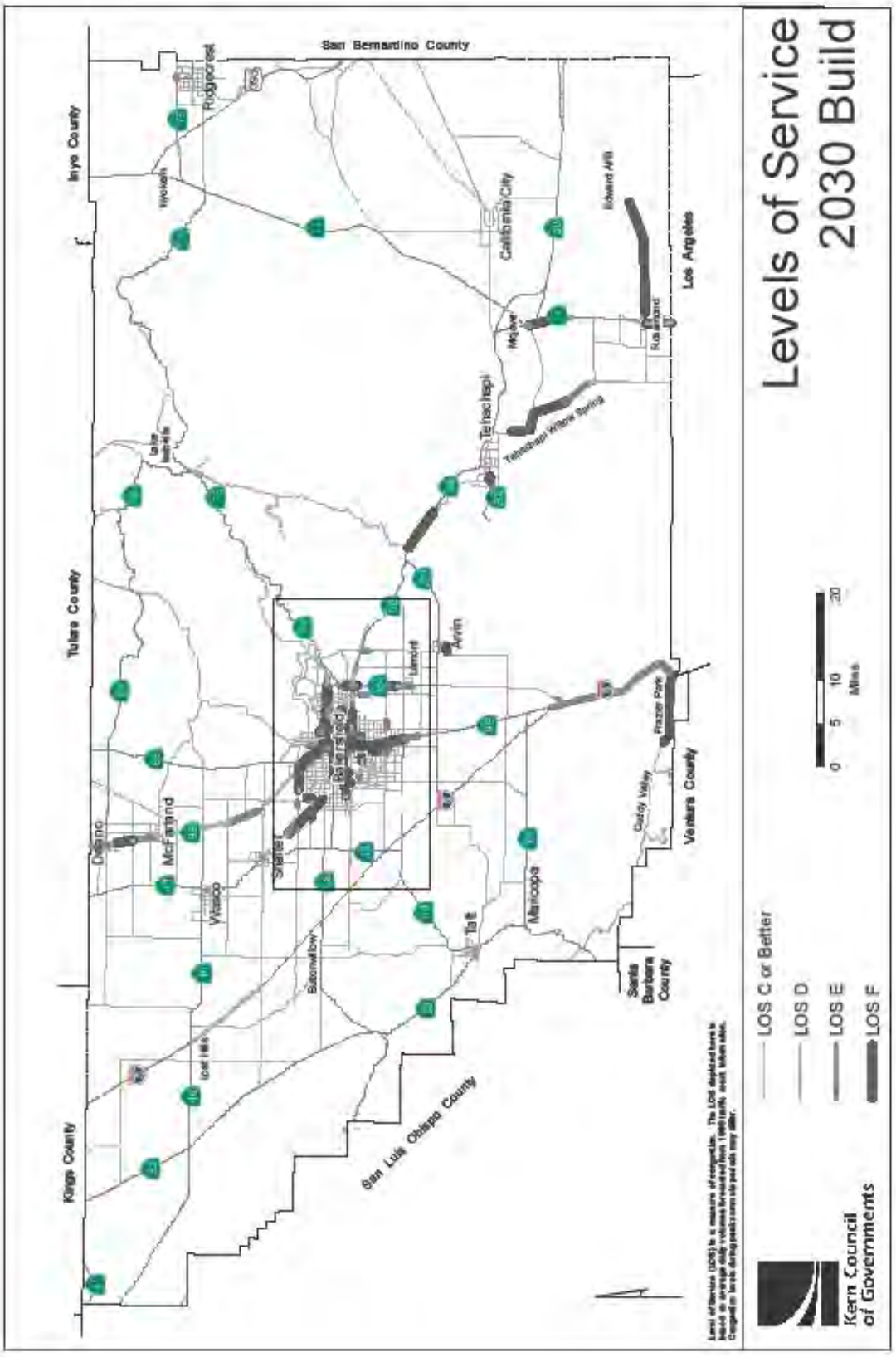
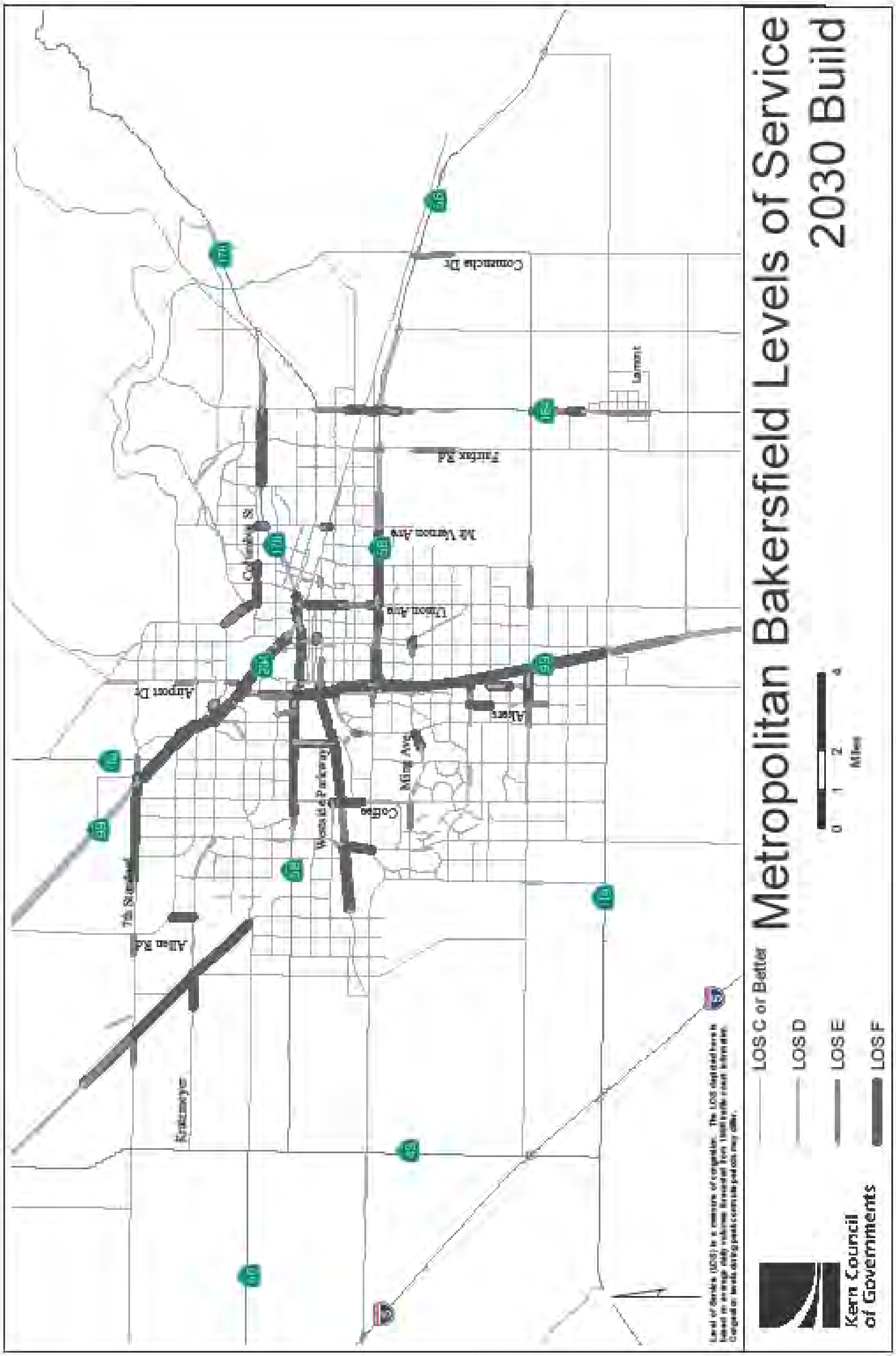

Levels of Service
2030 Build
San Bernardino County
Inyo County
Tulare County
Kings County
San Luis Obispo County
Santa Barbara County
Ventura County
Los Angeles
Ridgecrest
Inyokern
California City
Edwards AFB
Mojave
Rosamond
Tehachapi
Tehachapi Willow Springs
Lake Isabella
Arvin
Lamont
Bakersfield
Shafter
Wasco
McFarland
Delano
Buttonwillow
Taft
Maricopa
Frazier Park
Cuyama Valley
LOS C or Better
LOS D
LOS E
LOS F
0 5 10 20
Miles
Kern Council of Governments

FIGURE 7


Metropolitan Bakersfield Levels of Service
2030 Build
LOS C or Better
LOS D
LOS E
LOS F
Kern Council
of Governments

Air Quality Conformity

An important consideration in determining whether or not the changes reflected in Tables 1 and 2 will result in additional significant impacts is the issue of air quality conformity. Tables 6 through 8 identify air quality conformity analysis results for the San Joaquin Valley, Mojave Desert, and Indian Wells Valley Air Basin portions 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 Tables 1 and 2 do not exceed the base and budget thresholds established by EPA.

Based upon the findings described above and technical analysis contained in the Conformity for the 2009 FTIP, Kern COG finds that 2007 RTP Amendment would not result in regional impacts that are different from those disclosed in the 2007 RTP EIR.

TABLE 6
2009 Conformity Results Summary -- KERN SJV

Pollutant	Scenario	Emissions Total	DID YOU PASS?
		CO (tons/day)	CO
Carbon Monoxide	2010 Budget	180	
	2010	128	YES
	2018 Budget	180	
	2018	85	YES
	2020	74	YES
	2030	62	YES

		ROG (tons/day)	NOx (tons/day)	ROG	NOx
Ozone	2010	16.4	83.4		
	2011 Budget	15.7	79.4		
	2011	15.6	77.9	YES	YES
	2014 Budget	13.5	64.1		
	2014	13.2	61.3	YES	YES
	2017 Budget	11.6	49.5		
	2017	10.8	44.7	YES	YES
	2020 Budget	8.5	28.4		
	2020	8.4	28.1	YES	YES
	2023 Budget	8.1	24.8		
	2023	8.0	24.5	YES	YES
	2030	7.3	19.6	YES	YES

TABLE 6 (Cont.)
2009 Conformity Results Summary -- KERN SJV

		PM-10 (tons/day)	NOx (tons/day)		PM-10	NOx
PM-10	Adjusted 2005 Budget	13.1	86.8			
	2010	13.1	86		YES	YES
	Adjusted 2020 Budget	14.5	39.8			
	2020	14.5	39.2		YES	YES
	Adjusted 2030 Budget	16.5	36.8			
	2030	16.5	27.2		YES	YES

		PM2.5 (tons/day)	NOx (tons/day)		PM2.5	NOx
PM2.5 24-Hour Standard	2002 Base Year	3.7	94.1			
	2010	3.2	86		YES	YES
	2020	1.8	38.5		YES	YES
	2030	1.5	27.2		YES	YES

		PM2.5 (tons/year)	Nox (tons/year)		PM2.5	NOx
PM2.5 Annual Standard	2002 Base Year	1351	34347			
	2010	1168	31390		YES	YES
	2020	657	14053		YES	YES
	2030	548	9928		YES	YES

TABLE 7
2009 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			
	2010	3.9	16.2		YES	YES
	2020	2.4	7.2		YES	YES
	2030	2.1	5.1		YES	YES

TABLE 8
2009 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		
	2010	1.1		YES
	2013 Budget	1.7		
	2013	1.1		YES
	2020	1.2		YES
	2030	1.3		YES

Global Warming

Finally, another important consideration in determining whether or not the changes reflected in Tables 1 and 2 will result in additional significant impacts is the issue of global warming. Determining what the contribution of GHG emissions might be resulting from the Project is still infeasible given the inability to specifically calculate emissions consistent with an accepted methodology. However, Kern COG has compared the CO_2 emissions associated with the 2007 RTP Amendment projects listed in Tables 1 and 2 to projects evaluated in the 2007 RTP. The results of the comparison between the 2007 RTP and the 2007 RTP Amendment are presented in Table 9 below. The results indicate that CO_2 emissions will be reduced considering projects reflected in the 2007 RTP Amendment (Tables 1 and 2).

Based upon the findings described above, Kern COG finds that 2007 RTP Amendment would not result in increased CO_2 impacts compared to those disclosed in the 2007 RTP EIR.

TABLE 9
Future CO_2 Emissions
(Tons Per Day)

Scenarios	CO_2
2007 RTP (Year 2030) Projects	24.95
Amended 2007 RTP (Year 2030) Projects	24.79

SUMMARY OF MITIGATION MEASURES & MITIGATION MONITORING PROGRAM

The following section provides a summary of the mitigation measures and the associated mitigation monitoring program. Based on findings identified in Section 6 of the Draft EIR, projects contained in the 2007 Destination 2030 RTP and the Air Quality Impact and Conformity Analysis, the preferred alternative was adopted as the Final 2007 Destination 2030* 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.

This project alternative (2007 Destination 2030 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 following mitigation measures are included in the 2007 RTP EIR to address potential environmental impacts.

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 the mitigation measures.

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

    - 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.

    - 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.

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.

- 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.

    - 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.

    - 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.

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} 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;
     - Use of newer construction equipment, use of cleaner fuel types, engine modifications, or use of exhaust after-treatment devices;
     - Projects will be analyzed to identify whether Hazardous Air Pollutants (HAPs) would pose a risk to human health;
     - Limit area subject to excavation, grading, and other construction activity at any one time;
     - Limit the hours of operation of heavy duty equipment and/or the amount of equipment in use;
     - Replace fossil-fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set);
     - Require that all diesel engines be shut off when not in use to reduce emissions from idling;
     - Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing of construction activity during the peak hour of vehicular traffic on adjacent roadways, and "Spare the Air Days" declared by the District;
     - Implement activity management (May through October), lengthen the construction period to minimize the number of vehicles and equipment operating at the same time;
     - Off road trucks should be equipped with on-road engines when possible; and
     - Minimize obstruction of traffic on adjacent roadways.

   - 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 Destination 2030 RTP and other plans and programs.

4. Mitigation Measures – Global Warming

   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 2007 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 2007 RTP is designed to complement, rather than change, the plans adopted by the local agencies. Thus, the ultimate effect of the 2007 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 Final 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 2007 RTP compared to the current RTP (adopted in 2004). 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. According to Sunne Wright McPeak, former State Secretary of the Business, Housing, and Transportation Agency, 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 will identify 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 Blueprint is expected to be completed in Fall 2008.

Further, public transit over the next 20 years has been enhanced in the 2007 RTP over existing conditions and even when compared to the current RTP (adopted in 2004). 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 2007 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 2007 RTP.

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.

3.4 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.

    - 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 and sensitive species during the individual improvement project design phase.

    - Focused sensitive plant and wildlife species 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 surveys will be conducted during the appropriate flowering season for sensitive plant species with the potential to occur within the individual improvement project area.

    - If sensitive plant or wildlife species 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, silt fencing, exclusion fencing and/or appropriate compensation where impacts cannot be fully avoided.

    - Locations of sensitive species and sensitive 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 or wildlife species 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 abandon the nest.

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.

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. 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.

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

3.6 Mitigation

1. 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).

2. 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.

3. 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.

4. Design features will include measures to reduce erosion from storm water.

5. Road cuts will be designed to maximize the potential for revegetation.

6. Implementing agencies will ensure that projects avoid landslide areas and potentially unstable slopes wherever feasible.

7. Where practicable, routes and individual improvement project designs that would permanently alter unique geologic features will be avoided.

8. Implementing agencies will ensure that geotechnical investigations are conducted by a qualified geologist to identify the potential for subsidence and expansive soils.

9. Recommended corrective measures, such as structural reinforcement and replacing soil with engineered fill, will be implemented in individual improvement project designs.

10. 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.

11. Individual improvement project structures will be constructed by responsible agencies to the seismic standards contained in the most recent edition of the Uniform Building Code (UBC).

12. 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.

13. 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.

14. 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.

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

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

3.8 Mitigation

1. 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. 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.

3. 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.

4. 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.

5. 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.

6. 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.

7. 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.

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.

3.9 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.

2. 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.

3. 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.

4. 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.

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.

3.10 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, 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.

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

3.11 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.

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.

3.12 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. 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.

5. 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.

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. Measures intended to reduce vehicle miles traveled and reduce congestion are part of the 2030 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 Destination 2030 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 measures. Kern COG will be provided with documentation indicating compliance with mitigation measures.

3. 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.

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 2007 RTP and approved as part of the 2007 RTP EIR process.

- Statement of Overriding Considerations

  Based on information set forth in the Draft and Final EIR, and these findings of fact, Kern COG recognized that approval of the 2007 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 (2007 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 Destination 2030 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" (2004 Destination 2030 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 Destination 2030 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 Destination 2030 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 Destination 2030 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 Destination 2030 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 Destination 2030 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 Destination 2030 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 EIRs. First, the individual improvement projects identified in the Destination 2030 RTP are required to meet travel demand of residents and businesses through to the year 2030. 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 EIRs and referenced below.

♦ Significant Unavoidable Adverse Environmental Impacts

- Impact 3.1.1: Construction and implementation of individual improvement 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 individual improvement projects could alter the appearance of scenic resources.

- Impact 3.1.3: Construction and implementation of individual improvement projects could create significant contrasts with the overall visual character of the existing landscape setting.

- Impact 3.1.4: Construction and implementation of individual improvement 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 3.2.1: 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 3.2.2: Implementation of the proposed individual improvement projects could potentially result in the disturbance or loss of significant agricultural resources throughout the Kern region.

- Impact 3.3.3: Emissions impacts related to the Project are not considered to be significant. Tables 3-8A and 3-8B in the 2007 RTP 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 in the 2007 RTP provides analysis results for the Mojave Air Basin portion of Kern County.

- Impact 3.4.1: Individual improvement projects 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: Individual improvement projects 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: Individual improvement projects 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: Individual improvement projects would result in temporary and permanent impacts to terrestrial and aquatic wildlife movement.

- Impact 3.5.1: Cultural resources may be encountered during development of individual improvement projects proposed in the Destination 2030 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 3.6.1: Seismic events can damage transportation infrastructure through ground shaking, liquefaction, surface rupture and landslides.

- Impact 3.6.2: Some individual improvement projects require significant earthwork, increasing potential slope failure and long-term erosion. Earthwork can also alter unique geologic features.

- Impact 3.6.5: 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 individual transportation improvement projects.

- Impact 3.6.6: Construction and implementation of the individual improvement projects included in the RTP could alter the appearance of scenic resources.

- Impact 3.9.1: Individual improvement 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 3.9.2: 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 individual improvement projects could be impacted by construction and implementation of the proposed highway, arterial and transit projects.

- Impact 3.9.3: Construction and implementation of individual improvement 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 3.9.4: Implementation of the proposed RTP combined with projects and programs contained in the Destination 2030 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 individual highway, arterial and transit improvement projects proposed under the RTP could potentially result in the disturbance or loss of some of these designated areas. Specifically, new individual improvement projects involving construction would be most likely to result in impacts to these areas.

- Impact 3.10.1: Grading and construction activities associated with the proposed individual highway, arterial, and transit improvement 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.

- Impact 3.11.1: 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 3.11.2: The individual improvement projects have the potential to disrupt or divide a community by separating community facilities, restricting community access and eliminating community amenities.

- Impact 3.13.1: 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 2030 levels of service would still include a number of segments that will operate at deficient levels or at LOS E and F.

- Impact 3.13.3 – Individual improvement projects may increase traffic volumes not only on streets and highways, but also at at-grade highway-rail crossings.

APPROVALS REQUIRED

This Addendum EIR contains only changes necessary to make the previous 2007 RTP EIR adequate, and the changes made by the 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 but will be included in or attached to the Final EIR.

Kern Council of Governments (Kern COG) – Kern COG must decide whether to certify the Addendum EIR as the EIR for the 2007 RTP Amendment, prior to approving the proposed project.

SOURCES OF INFORMATION USED IN PREPARING THE ADDENDUM EIR

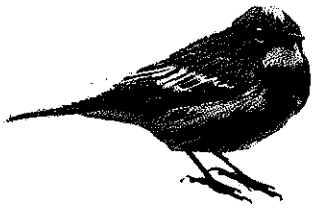
- Kern COG and VRPA Technologies, Inc., 2007 Destination 2030 Regional Transportation Plan (RTP), Draft Environmental Impact Report (EIR), March 1, 2007.
- Kern COG, 2007 Destination 2030 RTP, May 17, 2007.
- Kern COG and VRPA Technologies, Inc., 2007 Destination 2030 RTP, Final EIR, Mitigation Monitoring and Reporting Program, and Statement of Overriding Considerations, May 17, 2007.
- Kern COG Staff: Ms. Marilyn Beardslee, Senior Planner, Mr. Robert Ball, Senior Planner, Ed Flickinger, Transportation Planner, and Vincent Zhe Liu, Regional Planner III, personal communication, April/May 2008.
- State of California, Office of Planning and Research, California Environmental Quality Act (CEQA) Guidelines, Amended July, 2007.

LIST OF PREPARERS

- Marilyn Beardslee, Senior Planner, Kern COG
- Georgiena Vivian, Vice President, VRPA Technologies, Inc.
- Bruce O'Neal, President, Land Use Associates, VRPA Contractor
- Jeff Stine, Senior Transportation Planner, VRPA Technologies, Inc.
- Dena Graham, Research Specialist, VRPA Technologies, Inc.

APPENDIX A

RESPONSE TO COMMENTS



"PROTECTING OUR GREAT NATIONAL HERITAGE"

THE KERN AUDUBON SOCIETY

December 21, 2008

Ron Brummett, Executive Director
Kern COG
1401 19th St., Suite 300
Bakersfield, CA 93301

RE: 2009 Interim FTIP, RTP Amendment #1

Dear Mr. Brummett:

The Kern Audubon Society is a division of California Audubon. It has four hundred and twenty members living in Kern County. I have looked at the elements of the RTP and have written comments on behalf of our members.

As to the Global Warming section, I find that the plan does not offer enough projects on behalf of non-motorized transportation. Of the budget, only .05% is devoted to this category. Looking at the numerous charts of proposed projects, there was no indication of adding or improving Class I and Class II bicycle paths/lanes. There should a specific category for this type of construction, thus allowing for an accurate analysis of how the RTP will meet the California Global Warming reduction initiatives. In addition, the number, size, and location of car pooling areas needs to be categorized in both the budget section and the maps. In the transit category, the budget indicates that it is only 12.5%. I assume this means mass transit, such as bus. The amount should be increased dramatically. In the road improvement category for metropolitan area of Bakersfield, those roads that are being widened, there should be the consideration of construction of bus lanes, especially the Centennial Project.

The recommendations listed above, if adopted, would increase the RTP's commitment to reducing Global Warming. The state of California has taken upon itself, through the government agencies, the task of providing plans that directly reduce Global Warming. The RTP for KernCOG needs to adopt the state's initiative and provide construction site specific projects that reflect its commitment to the reductions.

Sincerely,

Harry Love

Harry Love, Kern Audubon Conservation Chair
13500 Powder River Ave., Bakersfield, CA 93314

Response to Kern Audubon Society

Thank you for your comment regarding coverage of global warming. The Amendment currently under consideration involves only a revision to the 2007 Destination 2030 Regional Transportation Plan's project list (Table 4-1). Kern COG will further address global warming and available mitigations in its next full update of the document. At this time, Kern COG is awaiting guidance from the Attorney General, California Air Resources Board and the Office of Planning and Research prior to preparing the 2011 Regional Transportation Plan.

December 26, 2008

California Department of Transportation (Caltrans) District 6
Kern Council of Governments' (Kern COG) Draft 2007 Destination 2030
Regional Transportation Plan (RTP) Amendment No. 1 Comments

The Kern Council of Governments' (Kern COG) Draft 2007 Destination 2030 Regional Transportation Plan (RTP) Amendment No. 1 adequately meet requirements set forth in the Safe, Accountable, Flexible, Efficient Transportation Equity Act: Legacy for Users (SAFETEA-LU) signed August 10, 2005.

RTP Amendment No.1 complies with requirements for the analysis and evaluation of the accompanying documents; the Draft 2009 Environmental Impact Report Addendum, and Corresponding Conformity Analysis, Draft 2009 Interim Federal Transportation Improvement Program Amendment No. 2.

Kern COGs' Amendment No.1 addresses the SAFETEA-LU requirement to include "year of expenditure" project cost estimates into the Regional Transportation Plan. Amendment No. 1 incorporates Federal regulations that require revenue estimates to reflect reasonably available dollars and that the project lists identified for construction be constrained by the projected level of revenue. The total net change for these amendments equals a decrease of $400 million based on available funding and "year of expenditure" cost estimates. This amendment will allow the 2007 Destination 2030 RTP projects to be programmed into the Transportation Improvement Program, making them eligible for funding.

If you have any questions, please contact Carol McDonald at (559) 445-5876.

Response to State Department of Transportation (Caltrans) District 6 dated December 26, 2008

Caltrans acknowledged receipt and their review of the documents. No questions or modifications were requested. Kern COG thanks Caltrans District 6 for its comments.

FINAL
Addendum Environmental Impact Report

September 17, 2009

Prepared For:

Kern Council of Governments
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Certification of the 2007 Destination 2030 Regional Transportation Plan Environmental Impact Report (EIR) and Addendum EIR

as the EIR for the

Proposed 2007 Destination 2030 Regional Transportation Plan Amendment #2

June 26, 2009

INTRODUCTION

Kern Council of Governments (Kern COG) has prepared a second amendment to the 2007 Destination 2030 Regional Transportation Plan (2007 RTP). 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. Improvement project financing sources and project delivery schedules reflected in the 2007 RTP and in Amendment #1 are proposed to be revised again (RTP Amendment #2) as discussed in the Project Description below. This AEIR has been prepared to address potential environmental effects related to Amendment #2.

CEQA PROVISIONS

As a part of Kern COG's current review of the RTP Amendment #2, it is necessary to identify any areas of the 2007 RTP EIR 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.

This AEIR, prepared pursuant to the California Environmental Quality Act (CEQA), Public Resources Code 21000 *et seq*., constitutes an Addendum to the 2007 Destination 2030 Regional Transportation Plan EIR (2007 RTP EIR) prepared and certified on May 17, 2007, and proposes that the certified 2007 EIR serves as the EIR for the proposed 2007 RTP Amendment #2 (project). This AEIR outlines the changes to the project, as analyzed in the 2007 EIR and in the AEIR prepared for the 2007 RTP Amendment #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 2007 RTP EIR or the AEIR for Amendment #1. 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 2007 RTP EIR has been prepared. The 2007 RTP, 2007 RTP EIR, 2007 RTP Amendment #1, and the 2007 RTP AEIR prepared to address RTP Amendment #1 can be found at www.kerncog.org and are on file at Kern COG offices.

PROJECT DESCRIPTION

2007 Destination 2030 Regional Transportation Plan, Program EIR, and Amendment #1 AEIR

The 2007 RTP is a planning guide containing transportation policy and projects for a 22 year period (through Fiscal Year 2029/30). The Plan includes programs and policies for congestion management, transit, bicycles and pedestrians, roadways, freight, and financing.

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. Different jurisdictions have different transportation implementation responsibilities under the Plan. These jurisdictions include Caltrans, County of Kern, and the eleven incorporated cities. The RTP addresses effects of planned growth and development on the existing and planned transportation system and the resultant analysis documents existing and future year (Year 2029/30) multimodal transportation system conditions. Modes studied include highways and arterials, public transit, aviation non-motorized systems, passenger and freight rail, goods movement, congestion management, and Intelligent Transportation Systems (ITS).

The process to approve the 2007 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 2007 EIR by Kern COG, and (3) approval of a resolution passed by Kern COG approving the 2007 RTP. Public involvement was encouraged throughout the 2007 RTP development process.

The 2007 RTP consists of required elements and is organized into various chapters.

- Chapter 1. Executive Summary;
- Chapter 2. Transportation Planning Policies;
- Chapter 3. Planning Assumptions;
- Chapter 4. Strategic Planning Investments;
- Chapter 5. Financing Transportation;
- Chapter 6. Environmental Justice;
- Chapter 7. Future Links;
- Chapter 8. Monitoring Progress;
- Chapter 9. References; and
- Appendices.

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 2007 RTP considered a projection of funding sources that may be available to finance transportation improvement projects over time. The projection of funds was accomplished considering historical allocations of federal, state and other funding.

To evaluate the regional impacts associated with the 2007 RTP, a Program EIR 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 a Subsequent or Supplemental EIR for Amendment #2 was not met and that an Addendum was the appropriate environmental document to address the 2007 RTP Amendment No 2.

Amendment #2 to the 2007 RTP

The scope of the proposed RTP Amendment #2 will be narrow and targeted at incorporating project updates from outlying areas, updates to the Metropolitan Bakersfield Impact Fee program list and Thomas Road Improvement Program, as well as the latest planning assumptions to measure air quality. Proposed RTP Amendment #2 necessitates preparation of a transportation/air quality conformity analysis and an Addendum to the programmatic EIR for the Destination 2030 RTP.

Improvement project financing sources and project delivery schedules reflected in the 2007 RTP and in Amendment #1 are proposed to be revised as part of RTP Amendment #2 as follows:

- Metropolitan Bakersfield Impact Fee Update - Adopted in June 2009, the fee update increased the fee and re-directed the spending of projects on the list from the periphery arterials in the Bakersfield Metropolitan Area to inner core transportation projects to provide the local match for federal demonstration project funds. Improvement projects on State Routes that are being funded with the local impact fee only are being added to the RTP as part of Amendment #2.

These new locally funded improvement projects are new to the financially constrained list of improvement projects in the 2007 RTP but are not new to the regional conformity model. The projects were included in the traffic, air quality conformity, and global warming modeling that was performed for both the 2007 RTP EIR and the RTP Amendment #1 AEIR.

- Federal Demonstration Project Refinements in Metropolitan Bakersfield - Two of the demonstration projects included in the 2007 RTP and Amendment #1 are now under construction and the remainder of the demonstration projects are in various stages of the environmental review process. As the environmental documents are being completed, refinements to some of the improvement project's limits, number of lanes, cost and date open to traffic are being made. Amendment #2 is bringing the 2007 RTP and Amendment #1 in line with the latest refinements to Federal Demonstration projects.

Tables 1 and 2 reflect changes to financially constrained and unconstrained projects addressed in the 2007 RTP Amendment #2 as discussed above. Tables 1 and 2 replace Tables 4.1 and 4.2 in the 2007 RTP and Tables 1 and 2 in the 2007 RTP Amendment #1 AEIR. Figures 1 through 4 provide a graphic view of the planned street and highway improvement projects reflected in Table 1. Figure 5 provides a graphic view of other street and highway improvement projects that cannot be funded within the timeframe of the RTP and are, therefore, financially unconstrained.

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 EIR prepared for the 2007 RTP, therefore, represents the culmination of all environmentally related issues raised during the comment period on the Draft EIR. In addition, the Final EIR 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 EIR are implemented.

The Final EIR for the 2007 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, May 17, 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 #1, January 15, 2009
- 2007 Destination 2030 RTP Amendment #1, AEIR, January 15, 2009

The summary of mitigation measures and the mitigation monitoring program identified beginning on Page 26 remain applicable considering changes reflected in this AEIR.

TABLE 1
Constrained Program of Projects

2007 through 2010 - Major Highway Improvements						
Project	**Location**	**Scope**	**YOE Cost**	**Project ID**	**Start**	**Constructed**
I-5	Kern	Interchange improvements at Laval Rd	$ 11,300,000	KER08RTP002	2009	2011
Route 46	Lost Hills	SLO County Line to Hallow ay Rd - w iden to four lanes (Segments 1 - 3)	$ 232,070,000	KER08RTP003	2009	2011
Route 99	Metro Bkfd	Hosking Ave - Construct interchange	$ 35,000,000	KER08RTP009	2010	2012
Challenger Dr. Ext.	Tehachapi	Viena St to Dennison Rd - construct new street	$ 1,500,000	KER08RTP015	2010	2012
W Ridgecrest Blvd	Ridgecrest	Mahan St to China Lake Blvd - w iden to four lanes	$ 10,200,000	KER08RTP001	2010	2012
7th Standard Rd	Shafter	Santa Fe Way to Coffee Rd - w iden to four/six lanes	$ 57,000,000	KER08RTP005	2009	2011
Westside Parkw ay	Metro Bkfd	SR 99 / Oak St to Heath Rd - construct local freew ay	$ 340,000,000	KER08RTP004	2009	2011-2014
		Sub-total	**$ 687,070,000**			
2011 through 2015 - Major Highway Improvements						
Project	**Location**	**Scope**	**YOE Cost**	**Project ID**	**Start**	**Constructed**
Route 14	Inyokern	Redrock / Inyokern Rd to Rt 178 - w iden to four lanes (Phase1)	$ 42,000,000	KER08RTP006	2014	2016
Route 58	Metro Bkfd	Rosedale Hw y - Callow ay Dr to SR 99 - w iden to six lanes; grade separation at Landco	$ 35,900,000	KER08RTP007	2011	2013
Route 58	Metro Bkfd	Rosedale Hw y - Allen Rd to Callow ay Dr - w iden to four /six lanes	$ 8,800,000	KER08RTP090	2011	2013
Route 58	Bakersfield	Rt 99 to Cottonw ood Rd. - w iden to six lanes	$ 50,000,000	KER08RTP019	2015	2017
Route 99	Bakersfield	Olive Drive - Construct interchange upgrades	$ 6,100,000	KER08RTP091	2012	2014
Route 178	Bakersfield	Morning Dr to Vineland Rd - new 4/6 lane freew ay w / interchange	$ 58,800,000	KER08RTP010	2011	2013
Route 178	Bakersfield	Vineland Rd to Miramonte Dr - w iden to four lanes	$ 36,500,000	KER08RTP011	2011	2013
Hageman Extension	Bakersfield	Knudsen Dr to Rt 204 - construct four/six lane extension	$ 68,900,000	KER08RTP013	2012	2014
Oak St/24th Street	Bakersfield	Rt 178 (24th St) and Oak St - construct improvements	$ 19,100,000	KER08RTP012	2012	2014
Centennial Corridor	Bakersfield	Westside Parkw ay to SR-58 - construct 6-lane freew ay on 8-lane ROW	$ 645,000,000	KER08RTP020	2015	2017
24th Street	Bakersfield	Rt 178 SR-99 to M Street - w iden to six/eight lanes	$ 34,000,000	KER08RTP014	2013	2015
		Sub-total	**$ 1,005,100,000**			
2016 through 2020 - Major Highway Improvements						
Project	**Location**	**Scope**	**YOE Cost**	**Project ID**	**Start**	**Constructed**
Route 14	Inyokern	Redrock / Inyokern Rd to Rt 178 - w iden to four lanes (Phase 2)	$ 42,000,000	KER08RTP017	2018	2020
Route 99	Delano	Woollomes Ave - interchange upgrades	$ 5,000,000	KER08RTP114	2016	2017
Route 178	Metro Bkfd	West of Fairfax Rd to w est of Morning Drive - w iden to six lanes	$ 806,000	KER08RTP111	2020	2022
Route 178	Metro Bkfd	West of Morning Dr to Vineland Rd - w iden to six lanes	$ 806,000	KER08RTP112	2020	2022
7th Standard Rd	Shafter/Bkfd	Rt 43 to Santa Fe Way - w iden to four/six lanes	$ 11,500,000	KER08RTP113	2016	2018
West Beltw ay	Metro Bkfd	Rosedale Hw y to Pacheco Rd - construct four/six lane facility	$ 173,200,000	KER08RTP016	2018	2020
		Sub-total	**$ 233,312,000**			

TABLE 1 (Continued)
Constrained Program of Projects

2021 through 2025 - Major Highway Improvements						
Project	**Location**	**Scope**	**YOE Cost**	**Project ID**	**Start**	**Constructed**
Route 14	Inyokern	Redrock / Inyokern Rd to Rt 178 - widen to four lanes (Phase 3)	$ 32,000,000	KER08RTP024	2022	2024
Route 58	Bakersfield	Rosedale Hwy - Rt 43 to Allen Rd - widen to four lanes	$ 59,000,000	KER08RTP092	2025	2027
Route 58	Bakersfield	Rt 99 to Cottonwood Rd. - widen to eight lanes	$ 47,400,000	KER08RTP093	2025	2027
Route 65	Bakersfield	James Rd to Merle Haggard Blvd - widen to four lanes	$ 3,000,000	KER08RTP094	2021	2023
Route 119	Taft	Cherry Ave to Elk Hills - widen to four lanes (Phase 1)	$ 115,000,000	KER08RTP022	2022	2024
Route 178	Bakersfield	At Rt 204 - Construct interchange	$ 25,700,000	KER08RTP095	2025	2027
Route 178	Bakersfield	Miramonte Dr to Rancheria Rd widen to four lanes	$ 11,700,000	KER08RTP084	2025	2027
Route 184	Bakersfield	At Union Pacific Railroad - Construct grade separation	$ 26,400,000	KER08RTP108	2025	2027
Route 204	Bakersfield	Airport Drive to Rt 178 widen to six lanes	$ 38,500,000	KER08RTP083	2025	2027
Route 204	Bakersfield	F St - construct interchange	$ 25,700,000	KER08RTP081	2025	2027
US 395	Ridgecrest	Between Rt 178 and China Lake Blvd - construct passing lanes	$ 20,000,000	KER08RTP089	2022	2024
West Beltway	Metro Bkfd	Taft Hwy to Pacheco Rd - construct four/six lane facillity	$ 80,400,000	KER08RTP097	2025	2027
		Sub-total	**$ 484,800,000**			
2026 through 2030 - Major Highway Improvements						
Project	**Location**	**Scope**	**YOE Cost**	**Project ID**	**Start**	**Constructed**
Route 46	Lost Hills	Hallow ay Rd to I-5 - interchange upgrade at I-5 (Phase 4)	$ 97,000,000	KER08RTP018	2026	2030
Route 119	Bakersfield	I-5 to Buena Vista - widen to four lanes	$ 31,300,000	KER08RTP099	2026	2028
Route 178	Bakersfield	Vineland Rd to Miramonte Dr - new Interchange; widen to six lanes	$ 231,500,000	KER08RTP025	2028	2030
Route 178	Bakersfield	Existing west terminus to Oswell St - widen to eight lanes	$ 140,500,000	KER08RTP026	2026	2028
Route 184	Bakersfield	Panama Rd to Rt 58 - widen to four lanes	$ 10,500,000	KER08RTP100	2029	2031
Route 184	Bakersfield	Morning Dr to Rt 178 - widen to four lanes	$ 5,000,000	KER08RTP101	2026	2028
West Beltway	Metro Bkfd	Rosedale Hwy to 7th Standard Rd - new four/six lane facility	$ 128,500,000	KER08RTP102	2028	2030
		Sub-total	**$ 644,300,000**			
		Total Major Highway Improvements	**$ 3,054,582,000**			

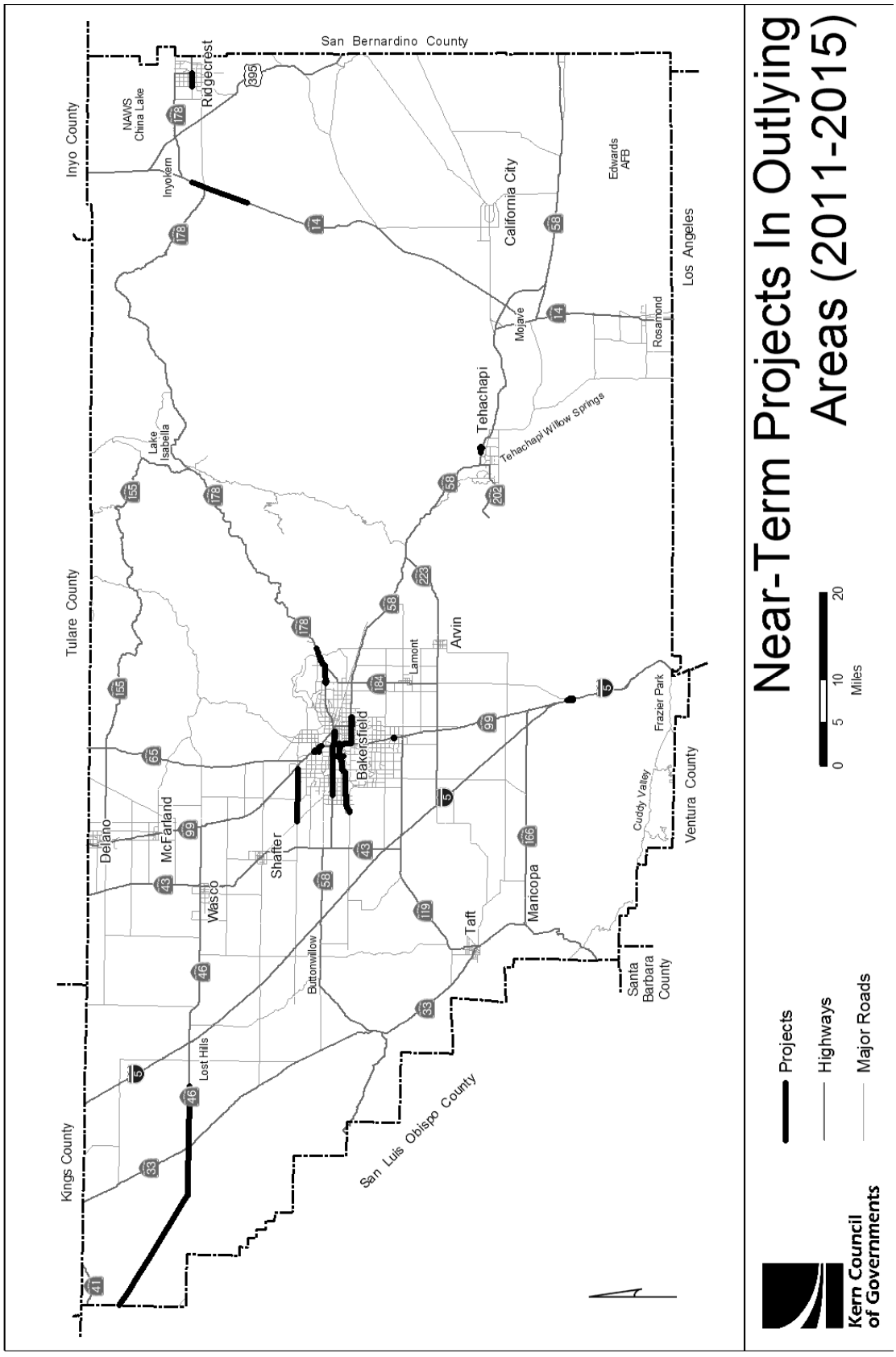
TABLE 2
Unconstrained Program of Projects

2031 through 2035 - Major Highway Improvements				
Project	**Location**	**Scope**	**YOE Cost**	**Project ID**
Route 46	Wasco	Juniper Ave (North) to Rt 43 - widen to four lanes	$ 130,000,000	KER08RTP079
Route 46	Kern	Near Lost Hills at Interstate 5 - upgrade and widen interchange	$ 130,000,000	KER08RTP033
Route 58	Kern	Rosedale Highway - I-5 to Rt 43 - widen to four lanes	$ 31,000,000	KER08RTP038
Route 58	Bakersfield	At various locations - ramp improvements	$ 32,600,000	KER08RTP103
Route 58	Tehachapi	Dennison Rd - construct interchange	$ 33,000,000	KER08RTP036
Route 99	Bakersfield	Rt 204 to 7th Standard Rd - widen to eight lanes	$ 91,100,000	KER08RTP104
Route 99	Bakersfield	At Olive Drive - interchange reconstruction	$ 108,000,000	KER08RTP021
Route 99	Bakersfield	At Snow Rd - construct new interchange	$ 138,200,000	KER08RTP115
Route 99	Bakersfield	Wilson Rd to Rt 119 - widen to eight lanes	$ 90,800,000	KER08RTP077
Route 99	Bakersfield	At various locations - ramp improvements	$ 37,000,000	KER08RTP105
Route 119	Taft / Bakersfield	Elk Hills - from County Rd to Tupman Ave - widen to four lanes	$ 48,000,000	KER08RTP086
Route 178	Bakersfield	At Rt 204 and 178 - reconstruct freeway ramps	$ 50,000,000	KER08RTP085
Route 178	Bakersfield	At various locations - ramp improvements	$ 37,000,000	KER08RTP106
Route 184	Lamont	Rt 58 to Rt 178 - widen to four lanes	$ 90,000,000	KER08RTP045
US 395	Johannesburg	San Bdo County Line to Rt 14 - widen to four lanes	$ 244,000,000	KER08RTP050
Cecil Ave	Delano	Albany St to Browning Rd - widen to four lanes	$ 21,000,000	KER08RTP055
South Beltway	Bakersfield	I-5 to Rt 58 - new expressway	$ 610,000,000	KER08RTP074
Beyond 2035 - Major Highway Improvements				
Project	**Location**	**Scope**	**YOE Cost**	**Project ID**
Interstate 5	Kern	From Fort Tejon to Rt 99 - widen to ten lanes	$ 86,000,000	KER08RTP027
Interstate 5	Kern	7th Standard Rd Interchange - reconstruction	$ 54,000,000	KER08RTP028
Route 33	Maricopa	Welch St to Midway Rd - widen to four lanes	$ 88,000,000	KER08RTP029
Route 43	Shafter	7th Standard Rd to Euclid Ave - widen to four lanes	$ 37,000,000	KER08RTP030
Route 46	Wasco	I-5 to Juniper Ave - widen to four lanes	$ 118,000,000	KER08RTP031
Route 46	Wasco	Rt 46 @ BNSF (Wasco) - construct grade separation	$ 39,500,000	KER08RTP119
Route 46	Wasco	Rt 43 to Rt 99 - widen to four lanes	$ 70,000,000	KER08RTP032
Route 58	Bakersfield	Future Rt 58 from I-5 to Heath Rd at Stockdale Hwy - construct new freeway	$ 500,000,000	KER08RTP137
Route 58	Bakersfield	Rt 58 / Rosedale Hwy @ Minkler Spur (Metro) - construct grade separation	$ 39,500,000	KER08RTP118
Route 58	Bakersfield	Near General Beale Rd - new truck weigh station	$ 11,000,000	KER08RTP034
Route 58	Kern/Tehachapi	East of Tehachapi to General Beale Rd - truck auxillary lanes / escape ramp	$ 86,000,000	KER08RTP035
Route 58	Bakersfield	General Beale Rd - construct new interchange	$ 54,000,000	KER08RTP037
Route 65	Kern	Merle Haggard Dr to County Line - widen to four lanes	$ 216,000,000	KER08RTP039

TABLE 2 (Continued)
Unconstrained Program of Projects

Beyond 2035 - Major Highway Improvements				
Project	**Location**	**Scope**	**YOE Cost**	**Project ID**
Route 99	Cnty/Bkfd	Rt 99 @ Minkler Spur (Metro) - construct grade separation	$ 69,000,000	KER08RTP134
Route 119	Taft	Rt 33 to Cherry Ave - widen to four lanes	$ 54,000,000	KER08RTP040
Route 119	Taft	Tupman Rd to I-5 - widen to four lanes	$ 60,000,000	KER08RTP041
Route 155	Delano	Rt 99 to Browning Rd - four lanes; reconstruct	$ 32,000,000	KER08RTP042
Route 155	Delano	Rt 155 @ UPRR (Delano) - construct grade separation	$ 39,500,000	KER08RTP120
Route 166	Maricopa	Basic School Rd - reconstruct intersection grade	$ 517,582	KER08RTP043
Route 178	Kern Canyon	Vineland Rd to China Garden - construct new freeway	$ 500,000,000	KER08RTP044
Route 204	Bakersfield	(Golden State Ave) Rt 99 to M St - construct operational improvements	$ 100,000,000	KER08RTP082
Route 184	Bakersfield	Rt 184 / Morning Dr. @ UPRR (Metro) - construct grade separation	$ 69,000,000	KER08RTP122
Route 202	Tehachapi	Woodford-Tehachapi Rd to (Lower) Cummings Valley Rd - widen to four lanes	$ 47,445,008	KER08RTP046
Route 202	Tehachapi	Tucker Rd to Woodford-Tehachapi Rd - widen to four lanes	$ 9,704,661	KER08RTP047
Route 223	Near Arvin	Rt 99 to Rt 184 - widen to four lanes	$ 69,010,921	KER08RTP048
Route 223	Arvin	East Arvin city limits to Rt 58 - widen to four lanes	$ 64,697,738	KER08RTP049
Santa Fe Way	Bakersfield	Hageman Rd to Los Angeles Ave - widen to four lanes	$ 127,238,885	KER08RTP051
East Beltway	Bakersfield	Rt 58 to Morning Drive - construct new expressway	$ 200,000,000	KER08RTP078
Beale Ave	Bakersfield	L St./Beale Ave @ BNSF RR (Bakersfield) - construct grade separation	$ 69,000,000	KER08RTP127
Q Street	Bakersfield	Q St @ UPRR near Golden State Hwy - construct grade separation	$ 59,000,000	KER08RTP136
Comanche Drive	Cnty/Bkfd	Comanche Dr @ UPRR (Metro) - construct grade separation	$ 59,000,000	KER08RTP123
Olive Drive	Cnty/Bkfd	Olive Dr @ UPRR (Metro) - construct grade separation	$ 69,000,000	KER08RTP129
Renfro Rd	Cnty/Bkfd	Renfro Rd @ BNSF RR (Metro) - construct grade separation	$ 59,000,000	KER08RTP130
California City Blvd	California City	Rt 14 east six miles - widen to four lanes	$ 22,000,000	KER08RTP052
Twenty Mule Team Rd	California City	California City Blvd to Rt 58 - widen to four lanes	$ 21,565,913	KER08RTP053
North Gate Rd	California City	California City Blvd to North Edwards - construct new four lane road	$ 60,384,555	KER08RTP054
Woollomes Ave	Delano	Rt 99 - widen bridge to four lanes; reconstruct ramps	$ 28,035,686	KER08RTP056
Garces Highway	Delano	I-5 to Rt 99 - widen to four lanes	$ 288,983,230	KER08RTP057
Kimberlina Rd	Cnty/Wasco	Kimberlina Rd @ BNSF (Wasco) - construct grade separation	$ 59,000,000	KER08RTP132
Red Apple Rd	Cnty/Tehachapi	Tucker Rd to Westwood Blvd - widen to four lanes	$ 4,313,183	KER08RTP058
Sierra Way	Cnty/Lk Isabella	South Fork Bridge - reconstruct bridge	$ 51,758,190	KER08RTP059
Frazier Park Blvd	Cnty/Frazier Pk	Construct Park and Ride facility near Frazier Park Blvd	$ 12,939,548	KER08RTP060
Wheeler Ridge Rd	Kern	I-5 to Rt 223 - widen to four lanes	$ 129,395,476	KER08RTP061
Rosamond Blvd	Cnty/Rosamond	Rosamond Blvd at UP RR - grade separation	$ 32,348,869	KER08RTP062
K Street	Cnty/Mojave	Extend K St to Rt 14	$ 12,939,548	KER08RTP063
Kratzmeyer Rd	Kern	Kratzmeyer Rd @ BNSF (Metro) - construct grade separation	$ 59,000,000	KER08RTP128
Airport Drive	Kern	Airport Dr @ UPRR (Metro) - construct grade separation	$ 69,000,000	KER08RTP131
Beyond 2035 - Major Highway Improvements				
Project	**Location**	**Scope**	**YOE Cost**	**Project Id**
Rosamond Blvd	Kern	Rosamond Blvd @ UPRR (Rosamond) - construct grade separation	$ 69,000,000	KER08RTP133
K Street	Kern	K St @ UPRR (Mojave) - construct grade separation	$ 69,000,000	KER08RTP135
Elmo Highway	McFarland	Elmo Hwy @ UPRR (McFarland) - construct grade separation	$ 69,000,000	KER08RTP124
Dennison Rd	Tehachapi	Green St/ Dennison Rd @ UPRR (Tehachapi) - construct grade separation	$ 69,000,000	KER08RTP121
Teh. Willow Springs Rd	Tehachapi	Rt 58 to Rosamond Blvd - widen to four lanes	$ 150,961,389	KER08RTP064
Valley Blvd	Tehachapi	Tucker Rd to Curry St - widen to four lanes	$ 23,722,504	KER08RTP065
Kern Ave	McFarland	Reconstruct pedestrian bridge at Rt 99	$ 5,391,470	KER08RTP066
Mahan St	Ridgecrest	Inyokern to South China Lake - widen to four lanes	$ 32,348,869	KER08RTP067
Richmond Rd	Ridgecrest	E Ridgecrest Blvd - widen to four lanes	$ 6,469,774	KER08RTP068
Bowman Rd	Ridgecrest	China Lake Blvd to San Bernardino Blvd - reconstruction	$ 4,313,183	KER08RTP069
S China Lake Blvd	Ridgecrest	US 395 to College Heights - reconstruction	$ 36,662,052	KER08RTP070
Lerdo Highway	Shafter	Lerdo Hwy / Beech Ave @ BNSF RR (Shafter) - construct grade separation	$ 69,000,000	KER08RTP125
Burbank Street	Shafter	Burbank St @ BNSF (Shafter) - construct grade separation	$ 59,000,000	KER08RTP126
7th Standard Rd	Shafter	I-5 to Santa Fe Way - widen to four lanes	$ 90,576,833	KER08RTP072
7th Standard Rd	Cnty/Shftr/Bkfd	7th Standard Rd. @ BNSF (Metro) - construct grade separation	$ 39,500,000	KER08RTP116
Hageman Rd	Cnty/Shftr/Bkfd	Hageman/Santa Fe Way @ BNSF (Metro) - construct grade separation	$ 39,500,000	KER08RTP117
Zachary Rd	Shafter	7th Standard Rd to Lerdo Hwy - widen to four lanes	$ 34,505,460	KER08RTP073
West Beltway-South	South Metro	Taft Hwy to I-5 - extend freeway	$ 100,000,000	KER08RTP075
West Beltway-North	North Metro	7th Standard Rd to Rt 99 - extend freeway	$ 100,000,000	KER08RTP076
		Total	**$ 6,997,430,525**	

FIGURE 1


Near-Term Projects In Outlying Areas (2011-2015)
Projects
Highways
Major Roads
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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
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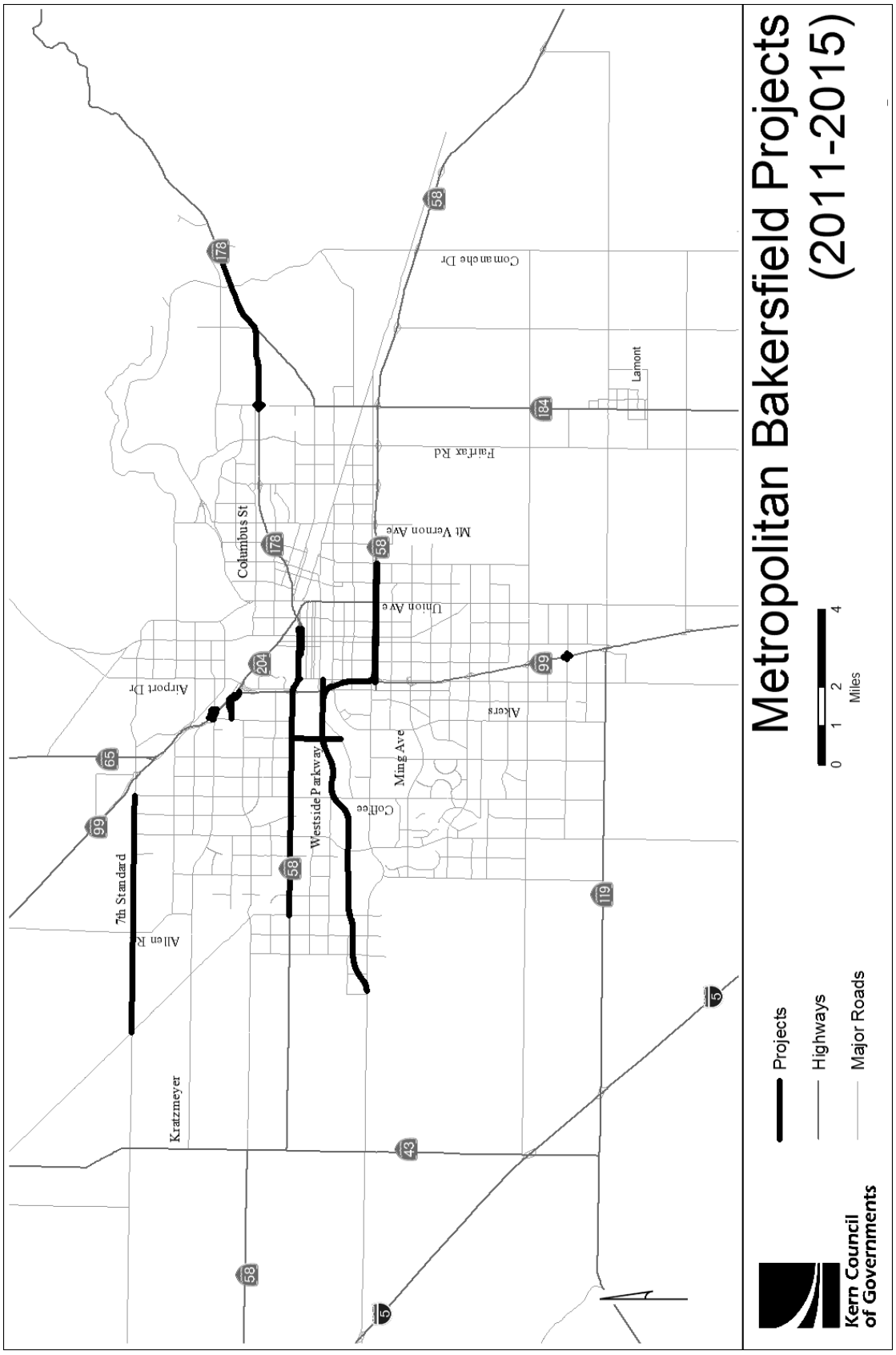
Cuddy Valley
Delano
McFarland
Wasco
Shafter
Buttonwillow
Lost Hills
Taft
Maricopa

FIGURE 2


Metropolitan Bakersfield Projects
(2011-2015)
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Highways
Major Roads
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Miles
Kern Council of Governments
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Lamont
Fairfax Rd
Mt Vernon Ave
Columbus St
Union Ave
Airport Dr
Akers
Ming Ave
Westside Parkway
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Allen Rd
Kratzmeyer
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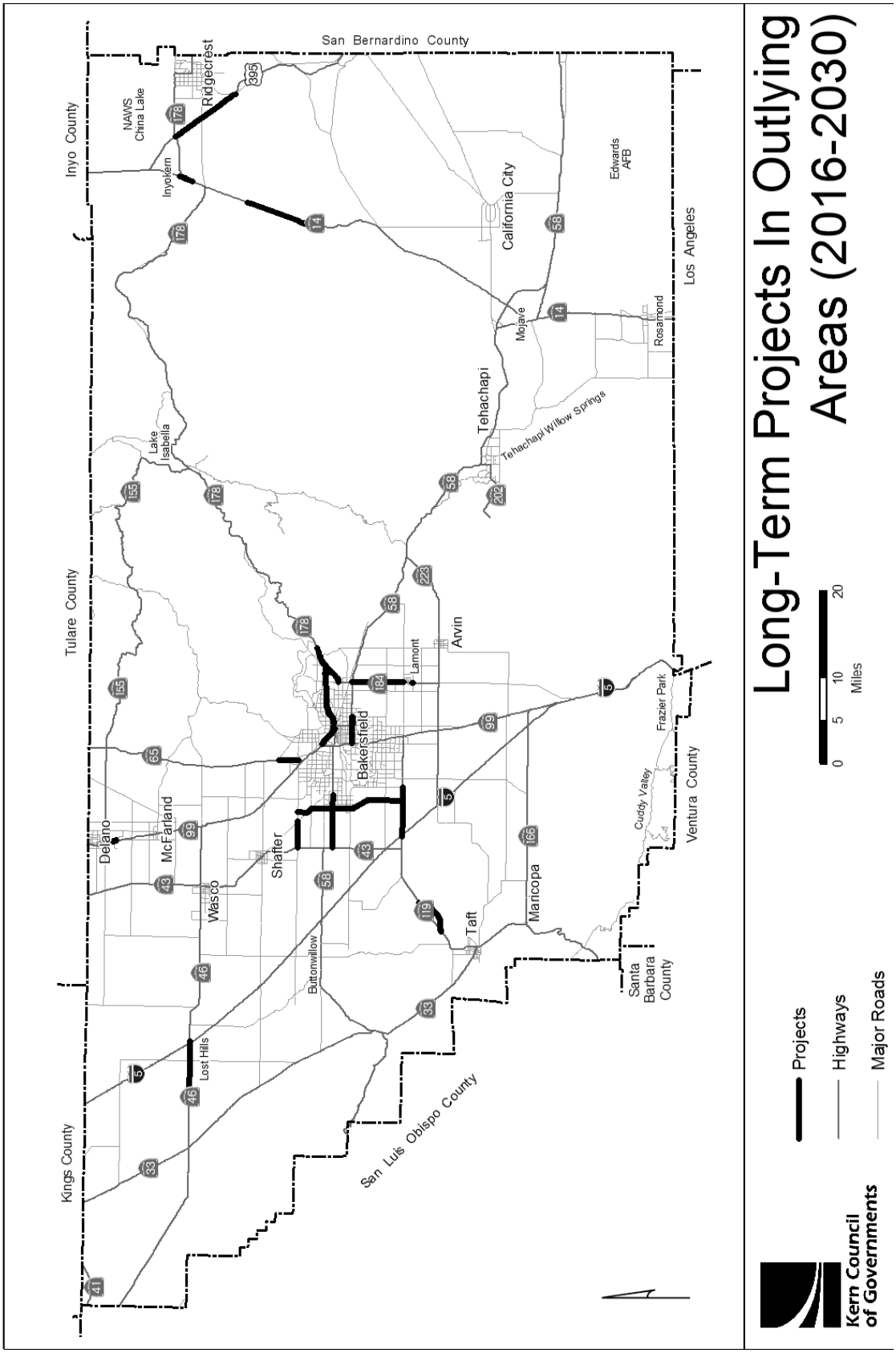
FIGURE 3


Long-Term Projects In Outlying Areas (2016-2030)
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Highways
Major Roads
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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
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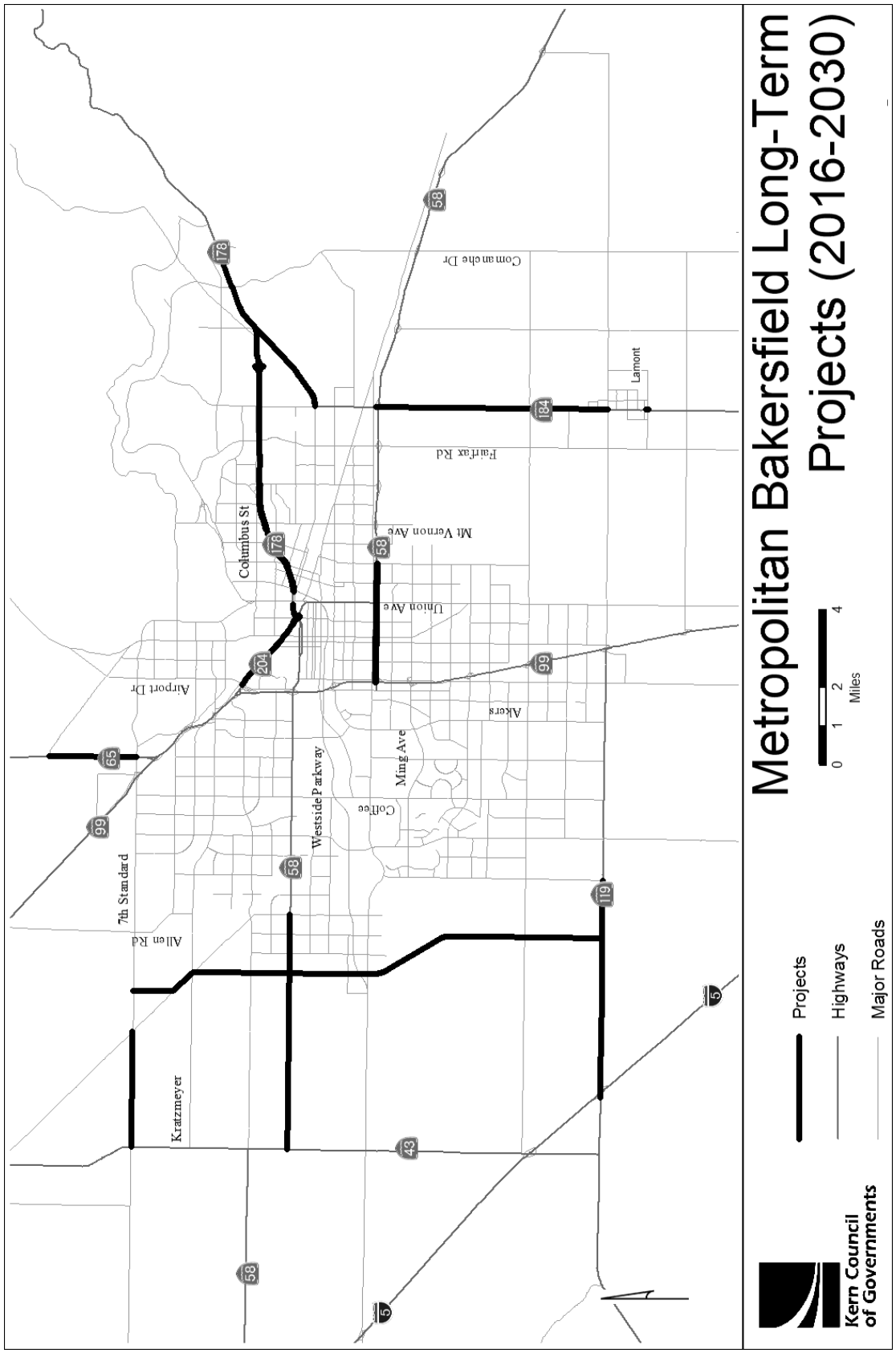
Delano
McFarland
Wasco
Shafter
Buttonwillow
Lost Hills
Taft
Maricopa

FIGURE 4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Miles
Projects
Highways
Major Roads
Kern Council of Governments
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Fairfax Rd
Mt Vernon Ave
Union Ave
Columbus St
Airport Dr
Akers
Ming Ave
Coffee
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7th Standard
Allen Rd
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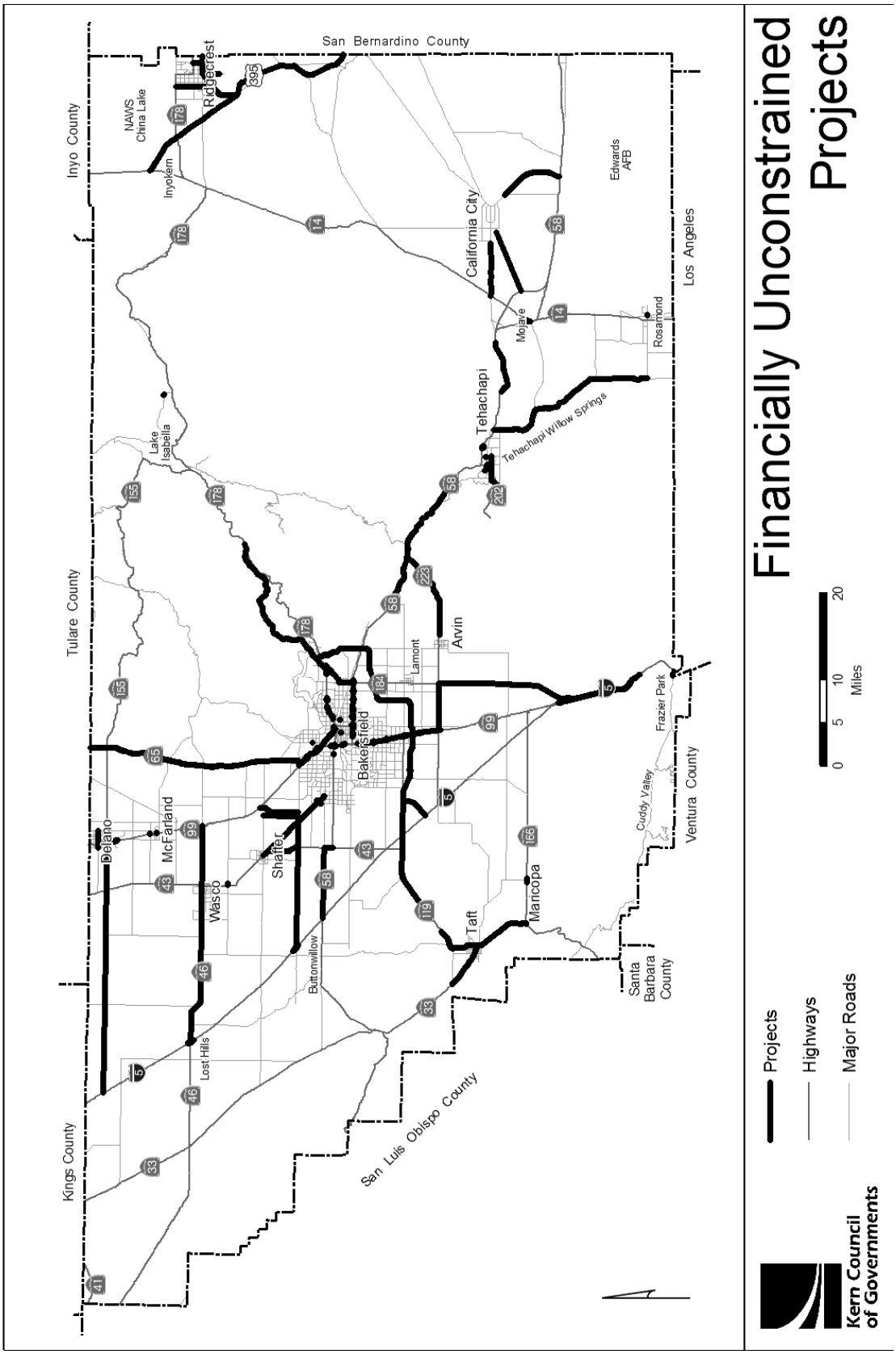
FIGURE 5


Financially Unconstrained Projects
Projects
Highways
Major Roads
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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
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California City
Edwards AFB
Mojave
Rosamond
Tehachapi
Tehachapi Willow Springs
Lake Isabella
Arvin
Lamont
Bakersfield
Frazier Park
Cuddy Valley
Delano
McFarland
Wasco
Shafter
Buttonwillow
Lost Hills
Taft
Maricopa

CHANGES TO THE 2007 RTP

The purpose of this AEIR is to reflect changes and additions to the previously certified 2007 RTP EIR and AEIR for RTP Amendment #1. Considering CEQA provisions detailed previously, the 2007 RTP Amendment #2 will:

- Not cause additional significant environmental effects addressed in the 2007 RTP EIR other than those already identified;
- The effects referenced in the 2007 RTP EIR or Amendment #1 AEIR will not be substantially more severe as a result of changes identified in the 2007 RTP Amendment #2; and
- Mitigation measures contained in the 2007 RTP EIR would continue to be feasible and would reduce environmental effects of changes referenced in this AEIR.

While the proposed changes to the 2007 RTP and RTP Amendment #1 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 2007 RTP EIR. Based upon the findings described above, the RTP Amendment will not require major revisions of the 2007 RTP EIR for the following reasons:

- Potential impacts and mitigation factors have been adequately addressed in the certified 2007 RTP EIR and reviewed in this Addendum EIR;
- Each individual transportation project referenced in the 2007 RTP, RTP Amendment #1, and in RTP Amendment #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 2007 RTP Amendment #2 will not cause additional environmental effects or require changes to mitigation measures contained in the 2007 RTP EIR or in RTP Amendment #2 AEIR, the following sections and tables have been prepared.

Hours of Vehicular Travel

Table 3 provides an estimate of the total number of vehicle travel hours in Kern County. The table references total travel hours for Year 2030 resulting from the 2007 RTP Amendment #1 and 2030 travel hours considering project changes reflected in Tables 1 and 2 (Amendment #2). As shown, changes to the 2007 RTP will result in an 8.06 percent decrease in vehicle hours countywide. While changes to the improvement projects reflected in Table 1 will affect vehicle hours of travel within the County, the primary reason for this difference is the improvement of travel forecasting tools by Kern COG over the past few years. These tools are documented in the Draft 2006 Regional Travel Demand Model report dated May 2009 and on file with Kern COG. Reductions in hours of travel (as a result of the improvements projects referenced in Tables 1 and 2, coupled with calibration of the 2006 Travel Forecasting Model) are considered positive impacts.

TABLE 3
Comparison of Daily Vehicle Hours of Travel (VHT)
By Facility Type & Total
RTP Amendment #1 vs. RTP Amendment #2

	New 2030 Model - Applied for RTP Amendment No. 2	Old 2030 Model - Applied for RTP Amendment No. 1	Difference	% Difference
FACILITY TYPE	**VHT**	**VHT**		
FREEWAYS	261,545	281,712	-20,167	-7.16%
EXPRESSWAYS	18,562	33,424	-14,862	-44.47%
MAJOR ARTERIALS	389,927	416,444	-26,517	-6.37%
MINOR ARTERIALS	55,573	68,558	-12,985	-18.94%
COLLECTORS	49,237	41,002	8,235	20.08%
CENTROIDS	102,713	119,769	-17,056	-14.24%
DIAMOND RAMPS	16,824	35,064	-18,240	-52.02%
LOOP RAMPS	1,776	1,273	503	39.51%
CORDON	29,284	9,313	19,971	214.44%
ALL FACILITIES	925,441	1,006,559	-81,118	-8.06%
(MINUS CENTROIDS)	822,728	886,790	-64,062	-7.22%

Source: Kern COG, Comparison of Old and New Conformity Models 6/1/09

Lane Miles

Table 4 provides an estimate of the total number of lane miles by facility type in Kern County. The table references total lane miles for Year 2030 resulting from the 2007 RTP Amendment #1 and 2030 lane miles considering project changes reflected in Tables 1 and 2 (Amendment #2). As shown, changes to the 2007 RTP will result in a 17.87 percent increase in lane miles countywide. While changes to the improvement projects reflected in Table 1 will increase lane miles within the County, the primary reason for this difference is the improvement of travel forecasting tools by Kern COG over the past few years. These tools are documented in the Draft 2006 Regional Travel Demand Model report dated May 2009 and on file with Kern COG. Reductions in lane miles along freeways and expressways do result and lane miles for major arterials are slightly increased; however, increases result for other minor street and road facility types. One reason that increases are estimated in the revised travel model is the addition of minor arterial and collector facilities throughout the County. The most significant reason, however, for the increase in lane miles was the addition of Traffic Analysis Zones (TAZs) and associated centroid connectors. When centroid connectors are omitted from total lane miles, a percentage difference of 7.31 results. This difference is not considered significant.

TABLE 4
Comparison of Lane Miles
By Facility Type & Total
RTP Amendment #1 vs. RTP Amendment #2

	New 2030 Model - Applied for RTP Amendment No. 2	Old 2030 Model - Applied for RTP Amendment No. 1	Difference	% Difference
FACILITY TYPE	**LANE MILES**	**LANE MILES**		
FREEWAYS	566	567	-1	-0.15%
EXPRESSWAYS	136	162	-26	-16.02%
MAJOR ARTERIALS	3,687	3,633	53	1.47%
MINOR ARTERIALS	742	534	208	38.86%
COLLECTORS	662	525	136	25.95%
CENTROIDS	2,918	1,971	946	48.00%
DIAMOND RAMPS	85	67	18	27.08%
LOOP RAMPS	7	6	1	18.47%
CORDON	150	129	21	16.50%
ALL FACILITIES	8,953	7,595	1,357	17.87%
(MINUS CENTROIDS)	6,035	5,624	411	7.31%

Source: Kern COG, Comparison of Old and New Conformity Models 6/1/09

Vehicle Miles Traveled (VMT)

Table 5 provides an estimate of the total countywide vehicle miles traveled (VMT). The table references total VMT for Year 2030 resulting from the 2007 RTP Amendment #1 and 2030 VMT considering project changes reflected in Tables 1 and 2 (Amendment #2). As shown, changes to the 2007 RTP will result in a 13.98 percent decrease in VMT countywide. While changes to the improvement projects reflected in Table 1 will affect VMT within the County, the primary reason for this difference is the improvement of travel forecasting tools by Kern COG over the past few years. These tools are documented in the Draft 2006 Regional Travel Demand Model report dated May 2009 and on file with Kern COG. Reductions in VMT (as a result of the improvements projects referenced in Tables 1 and 2, coupled with calibration of the 2006 Travel Forecasting Model) are considered positive impacts.

TABLE 5
Comparison of Daily Vehicle Miles Traveled (VMT)
By Facility Type & Total
RTP Amendment #1 vs. RTP Amendment #2

	Model - Applied for RTP Amendment No. 2	- Applied for RTP Amendment No. 1	Difference	% Difference
FACILITY TYPE	**VMT**	**VMT**		
FREEWAYS	16,839,114	18,701,756	-1,862,642	-9.96%
EXPRESSWAYS	862,180	1,689,088	-826,908	-48.96%
MAJOR ARTERIALS	13,582,462	16,025,821	-2,443,359	-15.25%
MINOR ARTERIALS	1,475,525	1,880,844	-405,319	-21.55%
COLLECTORS	674,545	777,552	-103,007	-13.25%
CENTROIDS	2,253,826	2,532,650	-278,824	-11.01%
DIAMOND RAMPS	355,289	283,313	71,976	25.41%
LOOP RAMPS	33,266	29,833	3,433	11.51%
CORDON	585,669	698,450	-112,781	-16.15%
ALL FACILITIES	36,661,877	42,619,308	-5,957,431	-13.98%
(MINUS CENTROIDS)	34,408,051	40,086,657	-5,678,606	-14.17%

Source: Kern COG, Comparison of Old and New Conformity Models 6/1/09

Travel Speed

Table 6 provides an estimate of average travel speeds in Kern County. The table references average travel speeds for Year 2030 resulting from the 2007 RTP Amendment #1 and 2030 travel speeds considering project changes reflected in Tables 1 and 2 (Amendment #2). As shown, changes to the 2007 RTP will result in a 6.42 percent decrease in travel speeds countywide. While changes to the improvement projects reflected in Table 1 will affect travel speeds within the County, the primary reason for this difference is the improvement of travel forecasting tools by Kern COG over the past few years. These tools are documented in the Draft 2006 Regional Travel Demand Model report dated May 2009 and on file with Kern COG. Reductions in travel speed (as a result of the improvements projects referenced in Tables 1 and 2, coupled with calibration of the 2006 Travel Forecasting Model) are considered positive impacts.

TABLE 6
Comparison of Daily Average Travel Speed By Facility Type & Total RTP Amendment #1 vs. RTP Amendment #2

	Model - Applied for RTP Amendment No. 2	Old 2030 Model - Applied for RTP Amendment No. 1	Difference	% Difference
FACILITY TYPE	AVG. SPEED	AVG. SPEED	AVG. SPEED	
FREEWAYS	64	66	-2	-3.03%
EXPRESSWAYS	46	51	-4	-8.09%
MAJOR ARTERIALS	35	38	-4	-9.49%
MINOR ARTERIALS	27	27	-1	-3.21%
COLLECTORS	14	19	-5	-27.74%
CENTROIDS	22	21	1	3.74%
DIAMOND RAMPS	21	8	13	161.39%
LOOP RAMPS	19	23	-5	-20.06%
CORDON	20	75	-55	-73.33%
ALL FACILITIES	40	42	-3	-6.42%
(MINUS CENTROIDS)	42	45	-3	-7.48%

Level of Service Results

Figures 6 and 7 identify the projected Level of Service (LOS) along the regional system of streets and highways within Kern County and in the Metropolitan Bakersfield area. These figures replace Figures 3-17 and 3-18 referenced in Section 3 of the 2007 RTP EIR and Figures 6 and 7 in the AEIR for RTP Amendment #1.

FIGURE 6

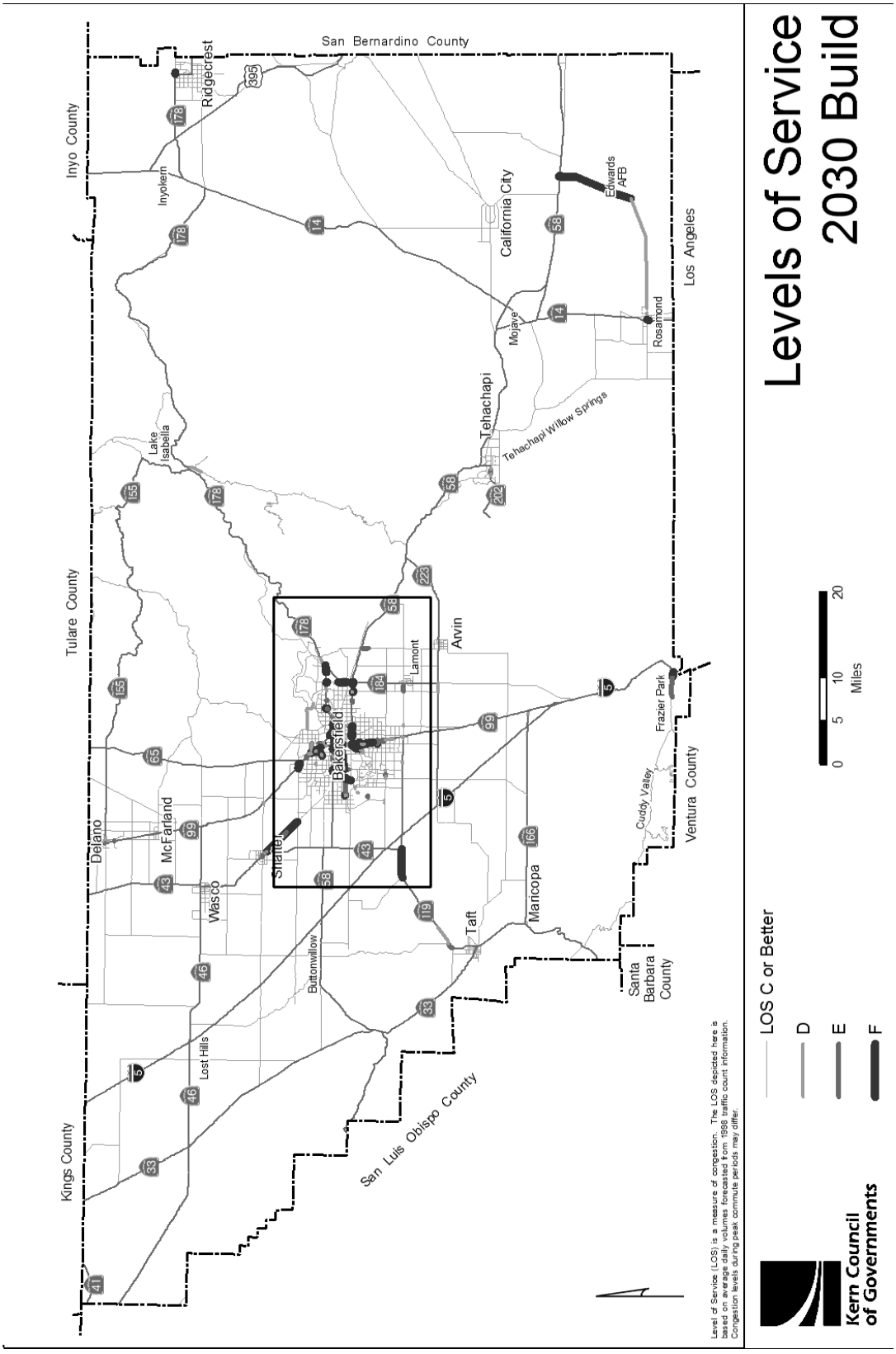
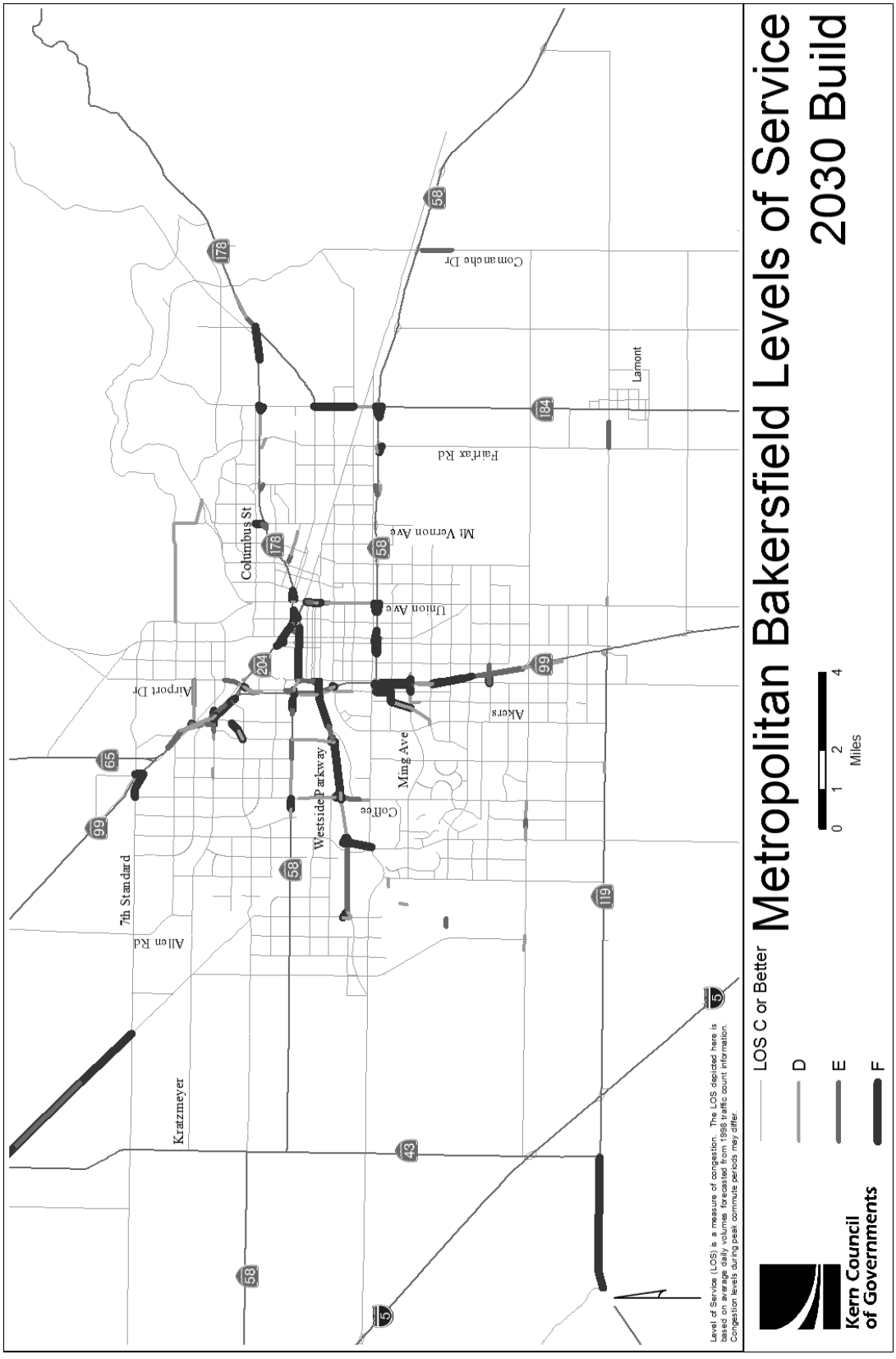

Levels of Service
2030 Build
LOS C or Better
D
E
F
0 5 10 20
Miles
Kern Council of Governments
Level of Service (LOS) is a measure of congestion. The LOS depicted here is based on average daily volumes forecasted from 1998 traffic count information. Congestion levels during peak commute periods may differ.
San Bernardino County
Inyo County
Tulare County
Kings County
San Luis Obispo County
Santa Barbara County
Ventura County
Los Angeles
Ridgecrest
Inyokern
California City
Edwards AFB
Mojave
Rosamond
Tehachapi
Tehachapi Willow Springs
Lake Isabella
Arvin
Lamont
Bakersfield
Shafter
Wasco
Delano
McFarland
Buttonwillow
Lost Hills
Taft
Maricopa
Cuddy Valley
Frazier Park

FIGURE 7


Metropolitan Bakersfield Levels of Service
2030 Build
LOS C or Better
D
E
F
0 1 2 4
Miles
Kern Council of Governments
Level of Service (LOS) is a measure of congestion. The LOS depicted here is based on average daily volumes forecasted from 1998 traffic count information. Congestion levels during peak commute periods may differ.
Lamont
Fairfax Rd
Mt Vernon Ave
Union Ave
Columbus St
Airport Dr
Akers
Ming Ave
Westside Parkway
College
7th Standard
Allen Rd
Kratzmeyer
Comanche Dr
178
58
184
204
99
65
119
43
5

Air Quality Conformity

An important consideration in determining whether or not the changes reflected in Tables 1 and 2 will result in additional significant impacts is the issue of air quality conformity. Tables 7 through 9 identify air quality conformity analysis results for the San Joaquin Valley, Mojave Desert, and Indian Wells Valley Air Basin portions 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 Tables 1 and 2 do not exceed the base and budget thresholds established by EPA. In addition, a majority of the emissions estimates are lower for RTP Amendment #2 when compared to emissions results for RTP Amendment #1.

Based upon the findings described above, Kern COG finds that 2007 RTP Amendment #2 would not result in regional impacts that are significantly different from those disclosed in the 2007 RTP EIR or for RTP Amendment #1.

TABLE 7
Comparison of Air Quality Conformity Emissions – Kern SJV
RTP Amendment #1 vs. RTP Amendment #2

Amendment No. 1 2009 Conformity Results Summary -- KERN SJV						Amendment No. 2 2009 Conformity Results Summary -- KERN SJV						Increase between Amendment No. 1 and No. 2?				
Pollutant	Scenario	Emissions Total		DID YOU PASS?		Pollutant	Scenario	Emissions Total		DID YOU PASS?		YES	NO	Difference for Total or ROG	Difference for NOx	% Increase
		CO (tons/day)		CO				CO (tons/day)		CO						
Carbon Monoxide	2010 Budget	180				Carbon Monoxide	2010 Budget	180								
	2010	128		YES			2010	121		YES			X	(7.0)		N/A
	2018 Budget	180					2018 Budget	180								
	2018	84.8		YES			2018	78.6		YES			X	(6.2)		N/A
	2020	74		YES			2020	68		YES			X	(6.0)		N/A
	2030	62		YES			2030	54		YES			X	(8.0)		N/A
		ROG (tons/day)	NOx (tons/day)	ROG	NOx			ROG (tons/day)	NOx (tons/day)	ROG	NOx					
	2011 Budget	15.7	79.4				2011 Budget	15.7	79.4							
	2011	15.1	78.0	YES	YES		2011	15.0	75.7	YES	YES		X	(0.1)	(2.3)	N/A
	2014 Budget	13.5	64.1				2014 Budget	13.5	64.1							
Ozone	2014	13.1	62.8	YES	YES	Ozone	2014	12.1	58.8	YES	YES		X X	(1.0)	(4.0)	N/A
	2017 Budget	11.6	49.5				2017 Budget	11.6	49.5							
	2017	11.3	48.6	YES	YES		2017	10.7	45.3	YES	YES		X X	(0.6)	(3.2)	N/A
	2020	10.2	38.7	YES	YES		2020	9.4	35.3	YES	YES		X X	(0.8)	(3.4)	N/A
	2023	9.3	31.8	YES	YES		2023	8.4	28.6	YES	YES		X X	(0.8)	(3.2)	N/A
	2030	8.6	27.0	YES	YES		2030	7.5	22.9	YES	YES		X X	(1.1)	(4.1)	N/A
		PM-10 (tons/day)	NOx (tons/day)	PM-10	NOx			PM-10 (tons/day)	NOx (tons/day)	PM-10	NOx					
	Adjusted 2005 Budget	13.1	86.8				Adjusted 2005 Budget	13.2	86.7							
	2010	13.1	86	YES	YES		2010	13.2	83.0	YES	YES	X	X	0.1	(3.0)	0.76%
PM-10	Adjusted 2020 Budget	14.5	39.8			PM-10	Adjusted 2020 Budget	13.0	42.1							
	2020	14.5	39.2	YES	YES		2020	13.0	35.8	YES	YES		X X	(1.5)	(3.4)	N/A
	Adjusted 2030 Budget	16.5	36.8				Adjusted 2030 Budget	14.6	39.7							
	2030	16.5	27.2	YES	YES		2030	14.6	23.0	YES	YES		X X	(1.9)	(4.2)	N/A

VRPA Technologies, Inc.

TABLE 7 (Continued)
Comparison of Air Quality Conformity Emissions – Kern SJV
RTP Amendment #1 vs. RTP Amendment #2

Amendment No. 1
2009 Conformity Results Summary -- KERN SJV

		PM2.5 (tons/day)	NOx (tons/day)	PM2.5	NOx
PM2.5 24-Hour Standard	2002 Base Year	3.7	94.1		
	2010	3.2	86	YES	YES
	2020	1.8	38.5	YES	YES
	2030	1.5	27.2	YES	YES

		PM2.5 (tons/year)	NOx (tons/year)	PM2.5	NOx
PM2.5 Annual Standard	2002 Base Year	1351	34347		
	2010	1168	31390	YES	YES
	2020	657	14053	YES	YES
	2030	548	9928	YES	YES

Amendment No. 2
2009 Conformity Results Summary -- KERN SJV

		PM2.5 (tons/day)	NOx (tons/day)	PM2.5	NOx
PM2.5 24-Hour Standard	2002 Base Year	3.7	94.1		
	2010	3.2	83.0	YES	YES
	2020	1.8	35.8	YES	YES
	2030	1.5	23.0	YES	YES

		PM2.5 (tons/year)	NOx (tons/year)	PM2.5	NOx
PM2.5 Annual Standard	2002 Base Year	1351	34347		
	2010	1168	30295	YES	YES
	2020	657	13067	YES	YES
	2030	548	8395	YES	YES

Increase between Amendment No. 1 and No. 2?

X X	0.0	0.0	N/A	
X X	0.0	(3.0)	N/A	
X X	0.0	(2.7)	N/A	
X X	0.0	(4.2)	N/A	

X X	0.0	0.0	N/A	
X X	0.0	(1095.0)	N/A	
X X	0.0	(985.5)	N/A	
X X	0.0	(1533.0)	N/A	

TABLE 8
Comparison of Air Quality Conformity Emissions – Kern Mojave Desert
RTP Amendment #1 vs. RTP Amendment #2

Amendment No. 1
2009 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		
	2010	3.9	16.2	YES	YES
	2020	2.4	7.2	YES	YES
	2030	2.1	5.1	YES	YES

Amendment No. 2
2009 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		
	2010	3.5	14.6	YES	YES
	2020	2.0	6.2	YES	YES
	2030	1.8	4.2	YES	YES

Increase between Amendment No. 1 and No. 2?

YES	NO	ROG	Difference for NOx	% Increase
	X X	(0.4)	(1.7)	
	X X	(0.3)	(1.0)	
	X X	(0.3)	(0.8)	

TABLE 9
Comparison of Air Quality Conformity Emissions – Kern Indian Wells Valley
RTP Amendment #1 vs. RTP Amendment #2

Amendment No. 1
2009 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	
	2010	1.1	YES
	2013 Budget	1.7	
	2013	1.1	YES
	2020	1.2	YES
	2030	1.3	YES

Amendment No. 2
2009 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	
	2010	1.3	YES
	2013 Budget	1.7	
	2013	1.2	YES
	2020	1.0	YES
	2030	1.1	YES

Increase between Amendment No. 1 and No. 2?

YES	NO	ROG	% Increase
	X	0.2	
	X	0.0	
	X	0.1	0.91%
	X	(0.2)	
	X	(0.2)	

Global Warming

Finally, another important consideration in determining whether or not the changes reflected in Tables 1 and 2 will result in additional significant impacts is the issue of global warming. Determining what the contribution of GHG emissions might be as a result of the Project is still infeasible given the inability to specifically calculate emissions consistent with an accepted methodology. However, Kern COG has compared the CO_2 emissions associated with the 2007 RTP Amendment #2 projects listed in Tables 1 and 2 to projects evaluated in the 2007 RTP Amendment #1. The results of the comparison are presented in Table 10 below. The results indicate that CO_2 emissions will be reduced considering projects reflected in the 2007 RTP Amendment #2 (Tables 1 and 2).

Based upon the findings described above, Kern COG finds that 2007 RTP Amendment #2 would not result in increased CO_2 impacts compared to those disclosed in the 2007 RTP EIR and RTP Amendment #1.

TABLE 10
Comparison of Future CO_2 Emissions (Tons Per Day) RTP Amendment #1 vs. RTP Amendment #2

New 2030 Model - Applied for RTP Amendment No. 2	Old 2030 Model - Applied for RTP Amendment No. 1	Difference	% Difference
CO_2	CO_2		
26.28	30.27	-4	-13.18%

SUMMARY OF MITIGATION MEASURES & MITIGATION MONITORING PROGRAM

The following section provides a summary of the mitigation measures and the associated mitigation monitoring program. Based on findings identified in Section 6 of the Draft EIR, projects contained in the 2007 Destination 2030 RTP and the Air Quality Impact and Conformity Analysis, the preferred alternative was adopted as the Final 2007 Destination 2030 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 (2007 Destination 2030 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 following mitigation measures are included in the 2007 RTP EIR to address potential environmental impacts.

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 the mitigation measures.

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

    - 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.

    - 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.

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.

- 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.

    - 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.

    - 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.

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} 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;
     - Use of newer construction equipment, use of cleaner fuel types, engine modifications, or use of exhaust after-treatment devices;
     - Projects will be analyzed to identify whether Hazardous Air Pollutants (HAPs) would pose a risk to human health;
     - Limit area subject to excavation, grading, and other construction activity at any one time;
     - Limit the hours of operation of heavy duty equipment and/or the amount of equipment in use;
     - Replace fossil-fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set);
     - Require that all diesel engines be shut off when not in use to reduce emissions from idling;
     - Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing of construction activity during the peak hour of vehicular traffic on adjacent roadways, and "Spare the Air Days" declared by the District;
     - Implement activity management (May through October), lengthen the construction period to minimize the number of vehicles and equipment operating at the same time;
     - Off road trucks should be equipped with on-road engines when possible; and
     - Minimize obstruction of traffic on adjacent roadways.

   - 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 Destination 2030 RTP and other plans and programs.

4. Mitigation Measures – Global Warming

   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 2007 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 2007 RTP is designed to complement, rather than change, the plans adopted by the local agencies. Thus, the ultimate effect of the 2007 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 Final 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 2007 RTP compared to the current RTP (adopted in 2004). 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. According to Sunne Wright McPeak, former State Secretary of the Business, Housing, and Transportation Agency, 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 will identify 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 Blueprint is expected to be completed in Fall 2008.

Further, public transit over the next 20 years has been enhanced in the 2007 RTP over existing conditions and even when compared to the current RTP (adopted in 2004). 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 2007 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 2007 RTP.

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.

3.4 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.

    - 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 and sensitive species during the individual improvement project design phase.

    - Focused sensitive plant and wildlife species 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 surveys will be conducted during the appropriate flowering season for sensitive plant species with the potential to occur within the individual improvement project area.

    - If sensitive plant or wildlife species 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, silt fencing, exclusion fencing and/or appropriate compensation where impacts cannot be fully avoided.

    - Locations of sensitive species and sensitive 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 or wildlife species 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 abandon the nest.

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.

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. 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.

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

3.6 Mitigation

1. 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).

2. 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.

3. 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.

4. Design features will include measures to reduce erosion from storm water.

5. Road cuts will be designed to maximize the potential for revegetation.

6. Implementing agencies will ensure that projects avoid landslide areas and potentially unstable slopes wherever feasible.

7. Where practicable, routes and individual improvement project designs that would permanently alter unique geologic features will be avoided.

8. Implementing agencies will ensure that geotechnical investigations are conducted by a qualified geologist to identify the potential for subsidence and expansive soils.

9. Recommended corrective measures, such as structural reinforcement and replacing soil with engineered fill, will be implemented in individual improvement project designs.

10. 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.

11. Individual improvement project structures will be constructed by responsible agencies to the seismic standards contained in the most recent edition of the Uniform Building Code (UBC).

12. 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.

13. 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.

14. 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.

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

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

3.8 Mitigation

1. 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. 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.

3. 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.

4. 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.

5. 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.

6. 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.

7. 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.

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

3.9 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.

2. 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.

3. 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.

4. 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.

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.

3.10 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, 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.

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

3.11 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.

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.

3.12 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. 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.

5. 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.

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. Measures intended to reduce vehicle miles traveled and reduce congestion are part of the 2030 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 Destination 2030 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 measures. Kern COG will be provided with documentation indicating compliance with mitigation measures.

3. 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.

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 2007 RTP and approved as part of the 2007 RTP EIR process.

- Statement of Overriding Considerations

  Based on information set forth in the Draft and Final EIR, and these findings of fact, Kern COG recognized that approval of the 2007 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 (2007 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 Destination 2030 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" (2004 Destination 2030 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 Destination 2030 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 Destination 2030 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 Destination 2030 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 Destination 2030 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 Destination 2030 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 Destination 2030 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 EIRs. First, the individual improvement projects identified in the Destination 2030 RTP are required to meet travel demand of residents and businesses through to the year 2030. 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 EIRs and referenced below.

♦ Significant Unavoidable Adverse Environmental Impacts

- Impact 3.1.1: Construction and implementation of individual improvement 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 individual improvement projects could alter the appearance of scenic resources.

- Impact 3.1.3: Construction and implementation of individual improvement projects could create significant contrasts with the overall visual character of the existing landscape setting.

- Impact 3.1.4: Construction and implementation of individual improvement 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 3.2.1: 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 3.2.2: Implementation of the proposed individual improvement projects could potentially result in the disturbance or loss of significant agricultural resources throughout the Kern region.

- Impact 3.3.3: Emissions impacts related to the Project are not considered to be significant. Tables 3-8A and 3-8B in the 2007 RTP 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 in the 2007 RTP provides analysis results for the Mojave Air Basin portion of Kern County.

- Impact 3.4.1: Individual improvement projects 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: Individual improvement projects 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: Individual improvement projects 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: Individual improvement projects would result in temporary and permanent impacts to terrestrial and aquatic wildlife movement.

- Impact 3.5.1: Cultural resources may be encountered during development of individual improvement projects proposed in the Destination 2030 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 3.6.1: Seismic events can damage transportation infrastructure through ground shaking, liquefaction, surface rupture and landslides.

- Impact 3.6.2: Some individual improvement projects require significant earthwork, increasing potential slope failure and long-term erosion. Earthwork can also alter unique geologic features.

- Impact 3.6.5: 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 individual transportation improvement projects.

- Impact 3.6.6: Construction and implementation of the individual improvement projects included in the RTP could alter the appearance of scenic resources.

- Impact 3.9.1: Individual improvement 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 3.9.2: 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 individual improvement projects could be impacted by construction and implementation of the proposed highway, arterial and transit projects.

- Impact 3.9.3: Construction and implementation of individual improvement 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 3.9.4: Implementation of the proposed RTP combined with projects and programs contained in the Destination 2030 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 individual highway, arterial and transit improvement projects proposed under the RTP could potentially result in the disturbance or loss of some of these designated areas. Specifically, new individual improvement projects involving construction would be most likely to result in impacts to these areas.

- Impact 3.10.1: Grading and construction activities associated with the proposed individual highway, arterial, and transit improvement 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.

- Impact 3.11.1: 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 3.11.2: The individual improvement projects have the potential to disrupt or divide a community by separating community facilities, restricting community access and eliminating community amenities.

- Impact 3.13.1: 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 2030 levels of service would still include a number of segments that will operate at deficient levels or at LOS E and F.

- Impact 3.13.3 – Individual improvement projects may increase traffic volumes not only on streets and highways, but also at at-grade highway-rail crossings.

APPROVALS REQUIRED

This AEIR only contains changes necessary to make the previous 2007 RTP EIR adequate, and the changes made by this A EIR do not raise important new issues about the significant effects to the environment. This AEIR need not be circulated for public review but will be included in or attached to the Final EIR.

Kern COG must decide whether to certify the AEIR as the EIR for the 2007 RTP Amendment, prior to approving the proposed project.

SOURCES OF INFORMATION USED IN PREPARING THE ADDENDUM EIR

- Kern COG and VRPA Technologies, Inc., 2007 Destination 2030 Regional Transportation Plan (RTP), Draft Environmental Impact Report (EIR), March 1, 2007.
- Kern COG, 2007 Destination 2030 RTP, May 17, 2007.
- Kern COG and VRPA Technologies, Inc., 2007 Destination 2030 RTP, Final EIR, Mitigation Monitoring and Reporting Program, and Statement of Overriding Considerations, May 17, 2007.
- Kern COG, 2007 Destination 2030 RTP Amendment #1, January 15, 2009.
- Kern COG, 2007 Destination 2030 RTP Amendment #1 AEIR, January 15, 2009.
- Kern COG Staff: Ms. Marilyn Beardslee, Senior Planner, Mr. Robert Ball, Senior Planner, and Vincent Liu, Regional Planner III, personal communication, May/June 2009.
- State of California, Office of Planning and Research, California Environmental Quality Act (CEQA) Guidelines, 2009.

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