Fresno COG

2011 REGIONAL TRANSPORTATION PLAN

Draft Subsequent Environmental Impact Report

Draft Subsequent Environmental Impact Report for the Fresno County Regional Transportation Plan

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1.0 EXECUTIVE SUMMARY

1.1 INTRODUCTION

The California Environmental Quality Act (CEQA) requires that a Draft Environmental Impact Report (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 Fresno COG 2011 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 SEIR review and comment period begins on April 30, 2010 and will end on June 14, 2010.

The Draft SEIR is composed of the following documents:

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

1.3 PROJECT DESCRIPTION

The project, as defined by CEQA Statutes, Section 21065, is the preparation of the 2011 revision of the RTP. Fresno 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, and Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). The RTP must also meet Transportation Conformity for the Air Quality Attainment Plan per 40 CFR Part 51 and 40 CFR Part 93. In addition, the RTP must address requirements set forth in Assembly Bill 32, the California Global Warming Solutions Act of 2006. Finally, the California Transportation Commission has prepared guidelines (most recently adopted by the Commission on September 20, 2007 plus an Addendum addressing Climate Change and Greenhouse Gas Emissions adopted by the Commission on May 29, 2008) to assist in the preparation of RTPs pursuant to Section 14522 of the Government Code.

As the designated Regional Transportation Planning Agency (RTPA), Fresno 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 May 2007, which addressed transportation improvement projects, programs, and funding reflected in the 2004 RTP together with additional funding from the proposed (now approved) ½ Cent Sales Tax Measure Extension (Measure "C"). Measure "C" did receive the 2/3rds voter approval required in order to pass in the November 2006 election. The 2011 revision to the RTP has been prepared to address possible environmental impacts resulting from its implementation and 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 SEIR. The RTP is also used as a transportation planning document by each of the sixteen member jurisdictions of Fresno COG. The members include the County of Fresno and the cities of Clovis, Coalinga, Firebaugh, Fowler, Fresno, Huron, Kerman, Kingsburg, Mendota, Orange Cove, Parlier, Reedley, San Joaquin, Sanger, and Selma.

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. Additional areas of emphasis and policy initiatives in the 2011 RTP include Climate Change (including a Climate Change Element), Congestion Management Process, Environmental Justice, Goods Movement, and Blueprint Planning. In addition, the 2011 RTP includes updated project lists and updated performance measures.

The RTP consists of required elements referenced in the enabling legislation and is organized into various sections. A description of each section follows.

- Chapter 1. San Joaquin Valley Regional Transportation Overview
- Chapter 2. Regional Setting, State and Federal Issues
- Chapter 3. Policy Element
- Chapter 4. Needs Assessment and Action Element
- Chapter 5. Climate Change
- Chapter 6. Financial Element
- Chapter 7. Public Outreach
- 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;
- Climate Change;
- Cultural Resources;
- Geology/Soils;
- Hazards & Hazardous Materials;
- Hydrology/Water Quality;

- Land Use/Planning;
- Noise;
- Population/Housing;
- Public Utilities, Other Utilities & Services Systems;
- Social and Economic Effects; 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 2011 RTP, the preferred alternative is the Environmentally Preferred Project Alternative. This alternative was analyzed considering congestion levels and historical growth rates in vehicle miles traveled (VMT) and vehicle trips (VT), as well as anticipated growth in the use of other forms of transportation such as transit, rail, aviation, and non-motorized.

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

IMPACTS AND MITIGATION MEASURES

Aesthetics

Impact 3.1.1 – Obstruction of Views

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 project-level analysis, as appropriate. The project implementation agency or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to construction. Fresno 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 – Altered Appearance of Scenic Resources

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.
- 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 project-level analysis, as appropriate. The project implementation agency or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to construction. Fresno 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 – Development of Previously Undeveloped Sites with Visual Qualities

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 Measures

All mitigation measures will be included in project-level analysis, as appropriate. The project implementation agency or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to construction. Fresno 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.
  - Grading will blend with the adjacent landforms and topography.

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

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

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

Significance After Mitigation

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

Impact 3.1.4 – New Sources of Light and Glare

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 proposed 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. Fresno County includes large and medium 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 Measures

All mitigation measures will be included in project-level analysis, as appropriate. The project implementation agency or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to construction. Fresno 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.
    - 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.

Cumulative Impact 3.1.5

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

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

The region will add increase in population and employment by 2035. Some of these people will live in households and work at jobs on land that is currently vacant. This conversion of vacant land to residential or other uses would have a significant impact on aesthetics and views. As a result of the population growth expected to occur in the region over the next 25 years, contrasts with existing visual character will occur either due to increased land use

intensity in urban areas or due to development of previously vacant lands. Although implementation of mitigation measures would reduce potential cumulative impacts, the impacts would be considered cumulatively considerable.

Mitigation Measures

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

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

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

Significance After Mitigation

This impact would remain significant because the population growth projected by 2035 in combination with the projects in the 2011 RTP would consume land that is currently vacant resulting in contrasts with the overall visual character of the existing landscape setting.

Agricultural Resources

Impact 3.2.1 - Changes in Land Use Patterns

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 RTP. 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. Fresno 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 – Loss of Agricultural Land

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

The Fresno 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 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. Fresno 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, project 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

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.

Air Quality

Short-Term Construction Impacts

Impact 3.3.1 – Project Construction

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.
- 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 the roadways' 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 Air District has developed thresholds of significance for individual construction projects. 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 individual improvement project. Mitigation measures to reduce air quality impacts would be established in 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. Fresno COG will be provided with documentation indicating compliance with mitigation measures.

- Project implementation agencies will ensure implementation of mitigation measures to reduce PM 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 5 percent 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 15 mph or less.
- Pave all construction access roads at least 100 feet on to the site from permanent roadways.
- Cover all haul trucks.

- Project implementation agencies will avoid individual 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 – Point Source Impacts

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 50 percent increase in population projected by the Year 2035. 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 Measures

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 – Long-Term Regional Impacts

Emissions impacts related to the Project are not considered to be significant. Table 3-6 identifies results of the air quality conformity results including the projected emissions of hydrocarbons, nitrogen oxides, carbon monoxide, volatile organic gases, and particulate emissions for the Project compared with the base (2002) or the emissions budgets for 2010 and 2018. The analysis shows that Project emissions do not exceed the base and budget thresholds established by EPA. While the Project meets Conformity requirements, the Conformity Finding requires the implementation of TCMs to eventually result in improved air quality within the Valley.

Mitigation Measures

- 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 Finding for the 2011 RTP and Federal Transportation Improvement Program (FTIP).

- All applicable rules and regulations adopted by the Air District will be followed by responsible and implementing agencies as individual improvement projects are designed, constructed and maintained. Fresno COG will be provided with documentation indicating compliance with all mitigation measures.

Significance After Mitigation

The Project will result in beneficial effects of system-wide improvement in traffic flows and reduced congestion and vehicle trips and vehicle miles traveled, which would reduce the potential for increased air emissions when compared to emissions budgets established by EPA. While TCMs have been identified in the Air Quality Conformity Finding, the TCMs will not result in attainment of all pollutants over time or by the year 2035. As a result, long-term emission impacts cannot be reduced to a less-than-significant level even with the addition of projects and programs outlined in the RTP.

Biotic Resources

Impact 3.4.1 – Removal or Degradation of Sensitive Natural Communities

The RTP includes 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 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. Fresno COG will be provided with documentation indicating compliance with mitigation measures.

- When applicable to federally funded projects, Fresno COG and responsible agencies should commit to improved interagency coordination and integration of the National Environmental Policy Act (NEPA) and the Clean Water Act Section 404 procedures during three stages: transportation planning, project programming, and project implementation. Fresno COG and affected state and local agencies should commit to ensuring the earliest possible consideration of environmental concerns pertaining to U.S. water bodies, including wetlands, at each of the three stages identified above. In addition, the agencies should place a high priority on the avoidance of adverse impacts to waters of the U.S. and associated sensitive species, including threatened and endangered species. Implementation of NEPA-404 requirements will expedite construction of necessary transportation projects, with benefits to mobility and the economy at large. The process will also enable more street and highway projects to proceed on budget and on schedule. Finally, the process will improve cooperation and efficiency of governmental operations at all levels, thereby better serving the public.

- 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.

- 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 habitats, 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 Project, impacts to these resources would remain a potentially significant impact at a regional level.

Impact 3.4.2 – Direct Impacts on Rare, Threatened, or Endangered Plant & Wildlife Species

The RTP includes projects 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 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. Fresno COG will be provided with documentation indicating compliance with mitigation measures.

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

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

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

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

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

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

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

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

- All vegetation (including tall grasses) will be removed between August 16 and February 14, if possible, to avoid potential conflicts with nesting birds. If it is not possible to remove vegetation during that time frame, a nest

clearance survey will be completed prior to vegetation clearing. Any detected nests will be mapped and provided with an appropriate buffer as recommended by a qualified biologist. Construction activities within the buffer area will not be allowed until after September 15 or until fledglings have abandoned the nest.

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

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

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

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

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

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

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 3.4.3 – Impacts on Rare, Threatened, or Endangered Species from Project Noise, Lighting and Deterrents

The Project 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 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. Fresno COG will be provided with documentation indicating 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 potentially significant at a regional level.

Impact 3.4.4 - Temporary and Permanent Impacts to Terrestrial and Aquatic Wildlife Movement

The Project 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, 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 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. Fresno COG will be provided with documentation indicating 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 individual 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 potentially significant at a regional level.

Impact 3.4.5 – Conflicts with an Adopted Habitat Conservation Plan

The Project could potentially conflict with an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Planning (NCCP) program or other approved local, regional or state HCP.

Mitigation Measures

All mitigation measures will be included in subsequent 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. Fresno COG will be provided with documentation indicating compliance with mitigation measures.

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

Significance After Mitigation

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

Impact 3.3.6 – Siltation Impacts

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

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

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

This impact would be significant.

Mitigation Measures

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

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

Significance After Mitigation

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

Cumulative Impacts 3.3.6

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

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

The amount of new developed acreage (consuming previously vacant land) would be considerable. This degree of development is reasonably foreseeable; however, to assign this future development to precise locations would be speculative, such that it cannot be estimated which natural vegetation communities would be affected. Despite the inability to predict the acreage of each habitat type that may be affected, it is reasonable to expect that this future development would contribute to the same types (although on a larger scale) of impacts detailed in Impacts 3.3.1 through 3.3.5 above.

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

Mitigation Measures

The cumulative impacts to biological resources, due to the forecast urban development associated with the 2011 RTP, would be mitigated using the same measures detailed for Impacts 3.3.1 through 3.3.5, in addition to the following measure.

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

Significance After Mitigation

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

Climate Change

Impact 3.5.1 - Increased Transportation GHG Emissions May Cause Climate Change

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

Impact 3.5.2 - Cumulative GHG Emission Impact

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

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

Mitigation Measures

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

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

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

A number of mitigation measures are included in Section 3.3 of the Draft EIR to address criteria emissions. Public transit has been enhanced in the 2011 RTP compared to the current RTP (adopted in 2007). Such improvements will help mitigate expected increases in emissions resulting from increased population and employment and the impact of planned growth and development on the regional transportation system. The RTP also includes references to a number of studies. The Plan contains a number of projects and significant funding for various forms of transportation in addition to streets and highways. Fresno COG is in the process of developing a Regional Blueprint for the year 2050. Fresno 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 Fresno 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 Fresno 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. Fresno COG is now working with the other Valley COGs to develop a Blueprint implementation plan, which will be complete by October 2010. .

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

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

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.

- Implementation agencies will ensure implementation of the following mitigation measures to reduce GHG emissions:

  - Develop land use patterns, which encourage people to walk, bicycle, or use public transit for a significant number of their daily trips:
    - Use comprehensive community plans and specific plans to ensure development is consistent and well connected by alternative transportation modes.
    - Adopt transit-oriented or pedestrian-oriented design strategies and select areas appropriate for these designs in the general plan.
    - Support higher density development in proximity to commonly used services and transportation facilities.
  - Develop in a compact, efficient form to reduce vehicle miles traveled and to improve the efficiency of alternatives to the automobile:
    - Use the control of public services to direct development to the most appropriate locations.
    - Promote infill of vacant land and redevelopment sites.
  - Encourage project site designs and subdivision street and lot designs that support walking, bicycling, and transit use:
    - Adopt design guidelines and standards promoting plans that encourage alternative transportation modes.
    - Require certain sites to be created to allow convenient access by transit, bicycle, and walking.

- Prior to or in conjunction with the adoption of the proposed 2014 RTP, Fresno COG will develop a GHG Emissions Reduction Plan that includes the following:

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

- Intelligent Transportation

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

- Create Alternative Fuel Vehicle and Infrastructure Toolkit for Local Governments

  Fresno COG will develop an Alternative Fuel Vehicle (AFV) and Infrastructure Toolkit for member agencies that will contain best practices related to ordinances, analytical tools, financing opportunities, codes, and standards related to reducing GHG emissions. Fresno COG will identify the alternative fuel vehicle(s) (e.g. neighborhood electric vehicles) and alternative fuel infrastructure with the potential to result in the greatest GHG emission reductions. Fresno COG will conduct a public education program for local governments and other public agencies, as appropriate to encourage the use of alternative fuel vehicles and infrastructure.

  Fresno COG will work with its member agencies to increase the number of AFVs (i.e., vehicles not powered strictly by gasoline or diesel fuel) both in municipally owned vehicles, as well as those owned by franchisees of these cities, such as trash haulers, green waste haulers, street sweepers, and curbside recyclable haulers. Such AFVs shall have GHG emissions at least 10 percent lower than comparable gasoline- or diesel-powered vehicles. The Alternative Fuel Vehicle and Infrastructure Toolkit described above will include best practices strategies to aid in the transformation of municipally owned or contracted fleets, including vehicle fleets operated and/or funded, at least in part by Fresno COG.

- Adopt Transportation Pricing Policy

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

- Create a Public Education Program on Individual Transportation Behavior and Climate Change

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

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

  Fresno COG will provide funding for a workshop on global climate change for local government officials that will focus on practical techniques that local governments can implement to reduce greenhouse gas emissions at the city and county level. Workshop topics shall include, but are not limited to the following:

  - The basic science behind climate change and its effects on the Fresno County Region.
  - Addressing the California Environmental Quality Act (CEQA) and the effects of AB 32.
  - What cities and counties are doing to address climate change and CEQA.

- Cost effective actions cities can take to reduce greenhouse emissions.
- Actions being taken in the Fresno County area to advance and support innovative "green" business.

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

- Adopt Safe Routes to School Policy and Implement Pilot Program and Conduct Workshop with Cities, Counties and School Districts to Identify other Opportunities for Collaboration that may reduce Greenhouse Emissions

Within 3 years from the adoption of the 2011 RTP, Fresno COG shall adopt a Safe Routes to Schools (SRTS) policy to promote the practice of safe bicycling and walking to and from schools throughout the Plan Area in order to reduce traffic congestion, improve air quality, and enhance neighborhood safety. There are both federal and state funding programs for SRTS. As a regional agency, Fresno COG is an eligible applicant under the federal program for both infrastructure and non-infrastructure projects. Under the state program, only cities and counties are eligible applicants for infrastructure projects only. (Caltrans, 2007) With the passage of the Safe Routes to School bill (AB 1475), a "one third" distribution formula for federal safety funds to be allocated in equal amounts to: state highways, local roads, and Safe Routes to School (SRTS) construction program was established.

The federal Safe Routes to School program (SRTS) was authorized by Section 1404 of the *SAFETEA-LU (the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users*). Fresno COG shall also apply for federal funds from the Federal Highway Administration through Caltrans to implement at least one SRTS pilot program within the Plan Area.

The State-legislated Safe Routes to School program (SR2S) is contained in Streets & Highways Code Section 2330-2334. Fresno COG shall encourage its member agencies to apply for funds available through the State Highway Safety Improvement fund for eligible infrastructure projects in order to improve bicycle and pedestrian safety for school children.

Fresno COG shall also join the Safe Routes to School National Partnership, a network of more than 300 nonprofit organizations, government agencies, schools, and professionals working together to advance the Safe Routes to School movement in the United States.

In addition, Fresno COG will host a regional workshop for all cities, counties, school districts and transit operators within the region to identify other potential opportunities for collaboration that would reduce greenhouse gas impacts. At a minimum, the issues discussed will include the findings from the Safe Routes to School activities described above, opportunities to increase the number of students with bus or other transit options to get to and from school, and integrating school siting practices with goals of promoting walkable neighborhoods with a wide range of easily accessible services.

- Establish a baseline for Fresno COG's own GHG Impacts

Starting in calendar year 2011, Fresno COG shall measure and record the GHG emissions associated with its own operations in an accurate manner and in a format consistent with the California Climate Action Registry's own reporting protocol in order to establish a baseline against which any future GHG reductions may be applied. The report shall be independently audited by a State and Registry approved certifier. The report shall include the following elements:

- Indirect emissions from electricity and natural gas use.
- Direct emissions from mobile source combustion (agency vehicles).
- Indirect emissions from business-related employee air travel.
- Direct and Indirect emissions from employee commuting.
- Indirect emissions associated with Fresno COG purchasing practices.

Fresno COG shall continue to report on its own GHG emissions consistent with this format in subsequent years and track its progress in reducing emissions. Emissions reductions in future years will comply with the goals set in the Regional Climate Change Action Plan.

Significance After Mitigation

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

Cultural Resources

Impact 3.6.1 – Impacts on Historic Resources

Development of highway, arterial, bridge crossing and transit projects may impact historic resources. This would be considered a significant impact. Types of projects that have the potential to impact historic resources include highway projects and bridge crossings that entail the development of new lanes and in some instances acquisition of new right-of-ways, and arterials and interchange projects, which entail the development of new lanes, and right-of-way acquisition.

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. Fresno COG will be provided with documentation indicating compliance with mitigation measures.

- As part of the appropriate environmental review of individual projects, the project implementation agencies will identify potential impacts to historic resources. A record search at the appropriate Information Center will be conducted to determine whether the individual improvement project area has been previously surveyed and whether resources were identified.

- As necessary, prior to construction activities, the project implementation agencies will obtain a qualified architectural historian to conduct historic architectural surveys as recommended by the Archaeological Information Center. In the event the records indicate that no previous survey has been conducted, the Information Center will make a recommendation on whether a survey is warranted based on the sensitivity of the individual improvement project area for cultural resources.

- The project implementation agencies will comply with Section 106 of the National Historic Preservation Act if federal funding or approval is required. This law requires federal agencies to evaluate the impact of their actions on resources included in or eligible for listing in the National Register of Historic Places. Federal agencies must coordinate with the State Historic Preservation Officer in evaluating impacts and developing mitigation. These mitigation measure may include, but are not limited to the following:

  - The project implementation agencies will carry out the maintenance, repair, stabilization, rehabilitation, restoration, preservation, conservation, relocation, or reconstruction of any impacted historic resource, which will be conducted in a manner consistent with the Secretary of the Interior's Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings.
- In some instances, the following mitigation measure may be appropriate in lieu of the previous mitigation measure:

  - The project implementation agencies will secure a qualified environmental agency and/or architectural historian, or other such qualified person to document any significant historical resource(s), by way of historic narrative, photographs, or architectural drawings, as mitigation for the effects of demolition of a resource will not mitigate the effects to a point where clearly no significant effect on the environment would occur.

Significance After Mitigation

This impact is considered less-than-significant after mitigation, because the recommended mitigation would require the local jurisdiction to follow a comprehensive procedure to assess the magnitude of the impact, and to avoid or mitigate the impacts, if necessary.

Impact 3.6.2 – Construction Impacts on Archaeological Resources

Construction activities involving excavation and earthmoving may encounter archaeological resources. This would be considered a significant impact. The OHP defines an archaeological "site" as consisting of three or more related resources discovered in one locality. In the event of archaeological and paleontological discovery, the resources are collected, documented and curated at an educational institution, such as a school or a museum. The curation facility is usually appropriated by the landowner or lead agency. A unique archaeological resource includes artifacts or sites in which it can be demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any one or all of the following criteria:

- It has made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States.
- It is associated with the lives of persons important to California's past.
- It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
- It has yielded, or may be likely to yield, information important to the prehistory or history of California.

The Project includes new streets, roads and highways, street, road and highway widening (for wider lanes, shoulders or new lanes), new transit facilities, grade crossings, consolidated rail corridors, bridge projects and a number of interchanges. These types of projects have the potential to impact archaeological materials, because they could take place in previously undisturbed areas. Excavation and soil removal of any kind, irrespective of depth, has the potential to yield resources of archaeological significance. Improvements and modifications to existing rights-of-way and right-of-way maintenance (such as pothole repair), would have less of an impact to archaeological resources because these individual improvement project locations have previously been disturbed. However, construction of additional lanes, would potentially impact archaeological materials, if it would entail brush clearing, grading, trenching, excavation, and/or soil removal of any kind, in an area not previously used as a paved transportation facility.

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. Fresno COG will be provided with documentation indicating compliance with mitigation measures.

Implementation of the following mitigation measures for archaeological resources is recommended to reduce impacts to a less-than-significant level. Project proponents will implement the following measures as part of the individual improvement project review process for proposed transportation projects:

- As part of the appropriate environmental review of individual projects, the project implementation agencies will consult with the Native American Heritage Commission to determine whether known sacred sites are in the project area, and identify the Native American(s) to contact to obtain information about the individual improvement project site.

- Prior to construction activities, the project implementation agencies will obtain a qualified archaeologist to conduct a record search at the appropriate Information Center of the California Archaeological Inventory to determine whether the individual improvement project area has been previously surveyed and whether resources were identified.

- As necessary prior to construction activities, the project implementation agencies will obtain a qualified archaeologist or architectural historian (depending on applicability) to conduct archaeological and/or historic

architectural surveys as recommended by the Information Center. In the event the records indicate that no previous survey has been conducted, the Information Center will make a recommendation on whether a survey is warranted based on the sensitivity of the individual improvement project area for cultural resources.

- If the record search indicates that the individual improvement project is located in an area rich with cultural materials, the individual improvement project proponent will retain a qualified archaeologist to monitor any subsurface operations, including but not limited to grading, excavation, trenching, or removal of existing features of the subject property.

- Construction activities and excavation will be conducted to avoid cultural resources (if found). If avoidance is not feasible, further work may need to be done to determine the importance of a resource. The project implementation agencies will obtain a qualified archaeologist familiar with the local archaeology, and/or an architectural historian should make recommendations regarding the work necessary to determine importance. If the cultural resource is determined to be important under state or federal guidelines, impacts on the cultural resource will be mitigated.

- The project implementation agencies will stop construction activities and excavation in the area where cultural resources are found until a qualified archaeologist can determine the importance of these resources.

Significance After Mitigation

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

Impact 3.6.3 – Construction Impacts on Paleontological Resources

Construction activities involving excavation and earthmoving may encounter paleontological materials. This is a significant impact. Construction of projects may cause unearthing of buried paleontological resources, such as true fossils, fossil casts, and breas. Construction occurring in previously undisturbed areas and deep excavation activities would have the greatest likelihood to affect paleontological resources. Improvements proposed in existing rights-of-way would have less potential to affect paleontological resources, since these areas have been previously disturbed. However, excavation and soil removal of any kind, irrespective of depth, has the potential to yield resources of paleontological significance. Fossils can be found at the surface in an outcrop, whereby chances are that same formation may extend many feet straight down into the ground, and may well extend for miles just below the surface. This makes the task of predicting which areas are paleontologically sensitive difficult. Construction and excavating activities relating to this Project pose a significant impact to paleontological materials.

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. Fresno COG will be provided with documentation indicating compliance with mitigation measures. Project proponents in the Fresno region will implement the following measures as part of the review process for proposed transportation projects:

- As part of the appropriate environmental review of individual projects, the project implementation agencies will obtain a qualified paleontologist to identify and evaluate paleontological resources where potential impacts are considered high; the paleontologist will also conduct a field survey in these areas.

- Construction activities will avoid known paleontological resources, especially if the resources in a particular lithic unit formation have been determined through detailed investigation to be unique. If avoidance is not feasible, paleontological resources will be excavated by the qualified paleontologist and given to a local agency, State University, or other applicable institution, where they can be displayed.

Significance After Mitigation

The measures recommended above require the individual improvement project proponents to assess the magnitude of the impact to resources, and to avoid or mitigate impacts. However, due to the size and potentially large number of paleontological localities that could be disturbed as a result of the combined projects, this impact would remain a potentially significant impact at a regional level.

Impact 3.6.4 – Impacts on Human Remains

Construction activities involving excavation and earthmoving may encounter human remains. This is a significant impact.

Humans have occupied Fresno County for at least 10,000 years, and it is not always possible to predict where human remains may occur outside of formal burials. Therefore, it is likely that excavation and construction activities, regardless of depth, may yield human remains that may not be interred in marked, formal burials. Construction and excavation activities associated with this Project are considered to potentially yield a significant impact relative to the discovery of human remains. Under CEQA, human remains are protected under the definition of archaeological materials as being "any evidence of human activity". Human remains are also protected under the Native American Graves and Repatriation Act (NAGPRA) of 1990, which was enacted to provide for the protection of Native American graves, as well as culturally affiliated items, associated funerary objects, unassociated funerary objects, sacred objects, and objects of cultural patrimony. NAGPRA states the following:

- A burial site means any natural or prepared physical location, whether originally below, on, or above the surface of the earth, into which as part of the death rite or ceremony of a culture, individual remains are deposited.

As previously stated, the Project includes new highways, highway widening, new transit facilities, grade crossings, rail corridors, bridge crossings and interchanges. These activities all have a potential to yield previously undiscovered human remains, because they could take place in previously undisturbed or under-disturbed areas. Excavation and soil removal of any kind, irrespective of depth, has the potential to yield human remains. Improvements and modifications to existing rights-of-way would have less of an impact because these individual improvement project locations have previously been disturbed. However, construction of additional lanes, could potentially impact human remains, if it would entail brush clearing, grading, trenching, excavation, and soil removal of any kind, in an area not previously used as a paved transportation facility.

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. Fresno COG will be provided with documentation indicating compliance with mitigation measures.

As part of the appropriate environmental review of individual projects, the project implementation agencies, in the event of discovery or recognition of any human remains, during construction or excavation activities associated with the individual improvement project, in any location other than a dedicated cemetery, will cease further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until the coroner

of the county in which the remains are discovered has been informed and has determined that no investigation of the cause of death is required

- If the remains are of Native American origin, the coroner will contact the Native American Heritage Commission in order to ascertain the proper descendants from the deceased individual. The coroner will make a recommendation to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods, which may include obtaining a qualified archaeologist or team of archaeologists to properly excavate the human remains.

- If the Native American Heritage Commission was unable to identify a descendant or the descendant failed to make a recommendation within 24 hours after being notified by the commission, in which case:

  - The landowner or his authorized representative will obtain a Native American monitor, and an archaeologist, if recommended by the Native American monitor, and rebury the Native American human remains and any associated grave goods, with appropriate dignity, on the property and in a location that is not subject to further subsurface disturbance where the following conditions occur:

    - The Native American Heritage Commission is unable to identify a descendent.
    - The descendant identified fails to make a recommendation.
    - The landowner or his authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.

Significance After Mitigation

This impact is considered less-than-significant after mitigation, because the recommended mitigation would require the individual improvement project proponent to follow a comprehensive procedure to assess the magnitude of the impact, and to avoid or mitigate the impacts, if necessary.

Cumulative Impacts 3.6.5

Growth and development in Fresno County will increase substantially by 2035. The 2011 RTP, by increasing mobility and by inclusion of transportation measures, influences the pattern of this development. The 2011 RTP's influence on growth contributes to regional impacts to existing historic resources and previously undisturbed and undiscovered cultural resources, as described in Impacts 3.6.1 and 3.6.4 above.

This impact would be cumulatively considerable.

The amount of new developed acreage (consuming previously vacant, open space/recreation and agricultural land) from transportation and land use policies in the 2011 RTP would be considerable when compared to the No Build or No Project Alternatives. This degree of development is reasonably foreseeable; however, to assign this future development to precise locations would be speculative, such that it cannot be estimated where cultural resources would be affected. Despite the inability to predict the acreage of previously undisturbed land that may be affected, it is reasonable to expect that this future development would contribute to the same types of impacts detailed in Impacts 3.6.1 and 3.6.4 above.

These effects are considered a significant cumulative impact.

Mitigation Measures

The cumulative impacts to cultural resources, due to the forecast growth and development associated with the 2011 RTP, would be mitigated using the same measures detailed for Impacts 3.6.1 and 3.6.4, in addition to the following measure.

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

Significance After Mitigation

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

Geology/Soils

Impact 3.7.1 – Damaged transportation Infrastructure from Seismic Activity

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

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

Mitigation Measures

- 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 project 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 project-specific mitigation designed to avoid or reduce the identified significant Project impacts to a less than significant level.

Impact 3.7.2 – Slope Failure and Erosion Due to Project Construction

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 the 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 due to 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 due to 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 project 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 Fresno County, long-term erosion and the potential for slope-failure will remain significant.

Impact 3.7.3 - Subsidence and the Presence of Expansive Soils

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 Fresno County due to 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 Fresno County, 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.

Impact 3.7.4 – Susceptibility to Seismic Action

Because of Fresno County's moderately high level of seismic activity (reference Figure 3-6), construction projects may be susceptible to fault rupture and severe ground shaking. Project susceptibility and potential damage to structures resulting from seismic action is considered a significant impact.

Mitigation Measure

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

Significance After Mitigation

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

Impact 3.7.5 – Geotechnical Impacts

As discussed in the Environmental Setting Section, soil types and bedrock formations within Fresno 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 transportation 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 proposed Project could potentially have short-term and long-term effects on water quality downstream from specific project sites. The short-term impacts relate to the grading and construction phases of project implementation 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 should 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 Fresno County, long-term erosion and the potential for slope-failure will remain significant.

Impact 3.7.6 – Impacts on State-Owned and State Minerals Reserved Lands

Some street and highway projects may be proposed along alignments that will affect State-owned and State minerals 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 and State mineral-reserved lands within Fresno County, the Project has the potential of causing significant impacts even with specific-project design. As a result, the impact will remain significant.

Cumulative Impact 3.7.7

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

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

Mitigation Measures

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

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

Significance After Mitigation

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

Hazards & Hazardous Materials

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

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

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

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

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

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

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

Mitigation Measures

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

Significance After Mitigation

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

Impact 3.8.2 - Release of Hazardous Materials

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

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

Mitigation Measures

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

Significance After Mitigation

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

Impact 3.8.3 The implementation of the 2011 RTP could create a hazard to the public or the environment through the disturbance of contaminated property during the construction of new transportation or expansion of existing transportation facilities.

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

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

Mitigation Measures

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

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

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

Significance After Mitigation

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

Cumulative Impact 3.8.4

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

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

This impact is considered to be significant.

Mitigation Measures

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

Significance After Mitigation

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

Hydrology/Water Quality

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 which, 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 individual 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 nonpoint-source pollutants generated regionally could occur. In general, they would be attributed to increases in impervious surface area associated with paving, combined with increased overall regional traffic. These nonpoint source pollutants include oil and grease, petroleum hydrocarbons, metals and possibly nutrients. The paving required for highway projects could have minor effects on the amount of surface water that filters into the ground. Pollutants in the runoff from proposed transportation facilities could affect groundwater basins.

Impact 3.9.1 – Impacts on Water Quality

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 a significant level.

Impact 3.9.2 – Impacts on Groundwater

The installation of transportation infrastructure and expansion of Project facilities could encounter groundwater. Individual projects may require dewatering during construction and for the life of the 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 should provide monitoring systems including long-term administrative procedures to ensure proper operations for the life of the Project.

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 a significant level.

Impact: 3.9.3 – Increased Flood Hazards

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 should be conducted by responsible agencies for new capacity-increasing projects. Drainage systems should 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 should 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.

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 a significant level.

Impact: 3.9.4 – Impacts from Construction Runoff

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 a significant level.

Cumulative Impact 3.9.5

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

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

Mitigation Measures

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

- Local governments should encourage Low Impact Development and natural spaces that reduce, treat, infiltrate and manage stormwater runoff flows in all new developments.
- Local governments should implement green infrastructure and water-related green building practices through incentives and ordinances. Green building resources include the U.S. Green Building Council's Leadership in Energy and Environmental Design, Green Point Rated Homes, and the California Green Builder Program.
- Local governments should integrate water resources planning with existing greening and revitalization initiatives, such as street greening, tree planting, development and restoration of public parks, and parking lot conversions, to maximize benefits and share costs.
- Developers, local governments, and water agencies should maximize permeable surface area in existing urbanized areas to protect water quality, reduce flooding, allow for groundwater recharge, and preserve wildlife habitat. New impervious surfaces should be minimized to the greatest extent possible, including the use of in-lieu fees and off-site mitigation.
- Future impacts to water quality shall be avoided through cooperative planning, information sharing, and comprehensive pollution control measure development.

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

Significance After Mitigation

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

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

Land Use/Planning

Impact 3.10.1 – Land Use Impacts

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 such as 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 RTP and a separate program has been included in the RTP to develop Transit Oriented Infrastructure for In-Fill Development (TOD). The program will establish transportation facilities in new or revitalized developments to increase transit use and encourage higher density and mixed land use planning. This program will utilize approximately $20 million to facilitate public incentives for alternative transportation practices. 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. Fresno COG will be provided with documentation indicating compliance with all mitigation measures.

- Individual projects will be consistent with local land use plans and policies that designate areas for urban land use and preserve agricultural lands that support the economic viability of agricultural activities.
- Prior to final approval of each individual improvement project, the implementing agency will conduct the appropriate project-specific environmental review, including consideration of potential land use impacts.

Significance After Mitigation

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

Impact 3.10.2 – Impacts on Sensitive Receptors

There are many sensitive receptors (residences, educational facilities, medical facilities, and places of worship) located in the urban and rural areas of the County. These receptors may be sensitive to noise, vibration, air pollutants, and other conditions that impact our environment. 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 due to noise, dust, vibration, etc. 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. These possible impacts would depend on several factors such as the type of Proposed for the area, projected land use designation of the area, and duration of proposed construction activities.

Generally, proposed projects are of the following two types:

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

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. Fresno 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, project implementation agencies will obtain necessary local permits and meet conditions for approval from applicable cities and counties.

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

- Potential significant impacts to land uses will be mitigated.

Significance After Mitigation

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

Impact 3.10.3 – Loss of Open Space and Community Recreation Areas

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. Development of RTP projects and programs 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 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. Fresno COG will be provided with documentation indicating compliance with all mitigation measures.

- Project implementation agencies will ensure that projects are consistent with federal, state, and local plans that preserve open space and recreation.
- Project 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, project implementation agencies will comply with Section 4(f) of the U.S. Department of Transportation Act.

Significance After Mitigation

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

Impact 3.10.4 – Loss of Agricultural Resources

Implementation of the proposed RTP could potentially result in the disturbance or loss of significant agricultural resources throughout the Fresno 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 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. Fresno 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, project implementation agencies will contact the California Department of Conservation and the County Agricultural Commissioner's office to identify the location of prime farmlands and lands that support crops considered valuable to the local or regional economy.

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

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

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

Significance After Mitigation

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

Impact 3.10.5 – Inconsistency with Local Land Use Plans

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 Fresno COG. For this reason, it is unlikely that any individual improvement project submitted would be inconsistent with a local jurisdiction's plan.

Mitigation Measures

- No mitigation measures are necessary.

Significance After Mitigation

Not applicable.

Cumulative Impact 3.10.6

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

Mitigation Measures

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

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

Significance after Mitigation

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

Noise

Impact 3.11.1 – Transportation Noise Impacts

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).
- *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.

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 project implementing agency or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to construction. Fresno COG will be provided with documentation indicating compliance with mitigation measures.

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

- Project 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 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 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.

- Project 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.

- The Project 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.

- Project 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.

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

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

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

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

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

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

Significance After Mitigation

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

Impact 3.11.2

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

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

Mitigation Measures

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

Significance After Mitigation

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

Cumulative Impact 3.11.3

Cumulative ambient noise levels could increase in the region to exceed normally acceptable noise levels or have substantial increases in noise as a result of the operation of expanded or new transportation facilities (i.e., increased traffic resulting from new highways, addition of highway lanes, roadways, ramps, and new use of new transit facilities as well as increased use of existing transit facilities, etc.).

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

could be significant. Over the course of the planning horizon there is likely to be constant construction within the region.

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

Mitigation Measures

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

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

Significance after Mitigation

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

Population/Housing

Impact 3.12.1 – Impacts on Regional Growth and Dispersion

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 socioeconomic conditions of the region. One of the strategic issues is growth. 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 Fresno region in 2035 of 1.5 million people and associated employment. The Fresno COG projected population growth does not exceed the Department of Finance (DOF) regional forecast and 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 in 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. Fresno 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.
- Project 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.
- Project implementation agencies will develop a construction schedule that minimizes potential neighborhood deterioration from protracted waiting periods between right-of-way acquisition and construction.

Significance After Mitigation

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

Impact 3.12.2 – Disrupt or Divide Communities

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. Fresno COG will be provided with documentation indicating compliance with all mitigation measures.

- Project 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.

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

Cumulative Impact 3.12.3

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

Mitigation Measures

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

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

Significance after Mitigation

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

Public Utilities, Other Utilities & Services Systems

Impact 3.13.1

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

Numerous agencies within multiple jurisdictions in the County provide fire protection, emergency medical services, and police services. Depending upon the timing, location, and duration of construction activities, several of the proposed improvement projects, including arterials, interchanges, and auxiliary lanes could delay emergency response times or otherwise disrupt delivery of emergency services. Emergency routes would be impaired if one or more lanes of a roadway in Fresno 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 individual improvement project 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 were 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, Fresno 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 project-specific environmental review, project 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. Fresno COG will be provided with documentation indicating compliance with mitigation measures.

- Prior to construction, the project implementation agency will ensure that all necessary local and state road and railroad encroachment permits are obtained. The project 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.
  - 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 would 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 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 project-specific mitigation designed to avoid or reduce the identified significant Project impacts to a less than significant level.

Impact 3.13.2 – Increased Demand for Solid waste, Wastewater, and Potable Water

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 the 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 a 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 project-specific environmental review, project 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 project implementation agencies or local jurisdiction will be responsible for

ensuring adherence to the mitigation measures. Fresno 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 sued 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 project-specific mitigation designed to avoid or reduce the identified significant Project impacts to a less than significant level.

Impact 3.13.3 – Construction Impacts

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

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

Significance After Mitigation

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

Impact 3.13.4 – Impacts on Underground Utilities

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 Fresno region. However, prior to construction, the 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 project-specific environmental review, project 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 project implementation agencies or local jurisdiction will be responsible for ensuring adherence to mitigation measures. Fresno 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 project-specific mitigation designed to avoid or reduce the identified significant Project impacts to a less than significant level.

Cumulative Impact 3.13.5

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

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

Mitigation Measures

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

Significance after Mitigation

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

Social & Economic Effects

Impact 3.14.1 – Impacts on Minority and Low-Income Populations

Construction of some improvement projects will be located in areas of minority and low-income populations.

The improvement projects may have direct, short-term impacts on surrounding communities related to construction, including noise, air quality, and traffic. However, none of these projects is expected to have a disproportionate impact on minority or low-income communities. The Project is designed to serve the entire population of the County, and the transportation projects are dispersed throughout the region.

While many of the projects are located in urban areas where a higher proportion of low-income and minority communities are, this is because more existing transportation routes and facilities are located in those areas. Since more of the existing facilities are located in those areas, more major improvements to address existing deficiencies and accommodate projected population growth are also needed in those areas.

Furthermore, Fresno COG works with cities, counties, and other implementing agencies to ensure that improvement projects serve those communities with the greatest transit needs, such as low-income or minority communities in urban core areas. The location, design, and alignment of transportation facilities and routes are planned to reduce potential impacts to the extent feasible, and to ensure that if impacts occur, these impacts do not disproportionately affect low-income or minority populations.
Numerous construction sites of individual improvement projects may experience short-term noise, air quality, and traffic impacts may occur throughout the region. Mitigation measures have been identified to minimize potential impacts and protect the sensitive uses that may be located near the individual improvement project sites, including low-income and minority communities (see sections on Noise, Air Quality, and Transportation). It is not anticipated that minority and low-income communities would be disproportionately and adversely affected. As a result, short-term impacts are considered less-than-significant.

The Population and Housing section identified potential construction impacts resulting from implementation of the Project that would remain significant and unavoidable after mitigation due to the potential displacement or relocation of homes and businesses. This section also found that some of the projects have the potential to disrupt or divide a community by separating community facilities, restricting community access and eliminating community amenities. In addition, the Land Use section identified potential impacts to sensitive receptors including residences, educational facilities, medical facilities, and places of worship that would remain significant and unavoidable after mitigation.

It is not anticipated that minority and low-income communities would be disproportionately and adversely affected, as compared to other communities. As a result, long-term impacts are considered less-than-significant.

Mitigation Measures

Impact is considered less-than-significant; no mitigation is required.

Significance After Mitigation

Not applicable.

Impact 3.14.2 – Impact on Low-Income and Minority Populations

The operation of some of the improvement projects will occur in areas of low-income and minority populations.

The improvement projects are designed specifically to improve transit accessibility, address existing deficiencies including congestion, and accommodate projected population growth to the extent feasible within the existing funding constraints. As discussed previously, the improvement projects are located throughout the region and are not disproportionately concentrated in low-income or minority areas. There are more improvements planned for urban areas. This is because more transportation facilities and services are located in those areas serving large concentrations of people. As a result, these facilities need improvements and maintenance to continue serving the rapidly growing urban populations.

The Project will improve the transportation system through a variety of projects. These improvements are intended to improve traffic flow and reduce congestion, and to address existing deficiencies associated with the projected population increases. A beneficial impact that will result from the Project is greater transit accessibility for low-income and minority residents. These improvements are particularly important for low-income and minority communities, as these groups typically rely on public transit to a much greater extent than communities with higher incomes do. Improvements will also allow more people in the region to reduce their dependence on automobiles and will provide enhanced connections to employment and housing.

It is anticipated that the improvement projects will increase accessibility and address existing problems with the transportation network. The projects are not expected to disproportionately affect low-income communities in an adverse way, since these projects are dispersed throughout the region, and are designed to improve transportation facilities where they are needed most. As a result, this impact is considered less-than-significant.

Mitigation Measures

Impact is considered less-than-significant; no mitigation is required.

Significance After Mitigation

Not applicable.

Cumulative Impact 3.14.3

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

Mitigation Measures

The mitigation measures listed above for Impacts 3.14.1 and 3.14.2 would be applied as mitigation for this impact. In addition, the following measure would apply.

- Regional planning efforts will be used to build a consensus in the region to support changes in social and economic conditions to accommodate future growth while maintaining the quality of life in the region.

Significance after Mitigation

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

Transportation/Traffic

Impact 3.15.1 – Level of Service Deficiencies

To determine the Year 2035 LOS for each segment along the Regionally Significant Roads System, segment LOS was estimated using the Fresno COG Traffic Model. The Model considers the capacity of individual segments based on numerous roadway variables (freeway design speed, signalized intersections per mile, number of lanes, saturation flow, etc.).

Results of the 2035 LOS segment analysis with the Project along the RTP Regionally Significant Roads System are reflected in Figures 3-8 (FCMA) and Figure 3-9 (Fresno County). Figures 3-10 and 3-11 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. Details regarding LOS by segment are provided in the 2011 RTP. Other details related to the Project and No Build condition are provided in Tables 3-21 and 3-22. While vehicle miles traveled (VMT) is higher under the Project alternative, all other major performance measures are lower with the Project vs. the No Build condition.

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 Fresno County region will significantly improve. Capacity increasing projects that would improve these deficient levels of service are not included in the Project.

Referencing Tables 3-21 and 3-22, 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. While the Project will improve deficient levels of service compared to the No Build or No Project Alternatives, the Project will not address all deficient levels of service anticipated in the future.

Mitigation Measures

Implementation of street and highway improvement projects and programs generally will serve to improve traffic flows and reduce congestion and delay within Fresno County. However, street and highway needs are constrained by limited funding sources that are necessary to implement additional projects along the regional transportation system. As indicated above, LOS deficiencies are projected to occur, even considering the wide range of financially constrained street and highway improvements identified in the RTP.

To address these and other transportation/circulation related impacts, the following mitigation measures are recommended:

- A number of local street and road and State Route segments along the regional street and highway will experience deficient LOS conditions by 2030. Mitigation measures for these segments have not been identified or programmed in the RTP. Intersection improvements and lane additions would improve deficient levels of service to acceptable levels consistent with minimum LOS policies identified in the RTP; however, funding to address the improvements is not available or the costs to mitigate the deficiencies are prohibitive. Fresno COG should coordinate efforts to identify appropriate strategies that would improve deficient levels of service along the affected streets and highways. Fresno COG should work continue to with local agencies and Caltrans, District 06 to identify alternative improvements, associated cost estimates, and an implementation plan and schedule as part of the Freeway Deficiency Study and during update of local general plans and other planning

efforts. Various funding sources should be analyzed as part of implementation plans and findings should be incorporated into future RTPs.

- Local agencies should be encouraged to update general, area, community and specific plans to reflect the current status of future street and highway improvements. The timing of improvements should also be regularly updated. These measures will help Fresno COG identify appropriate and available funding for planned street and highway improvements along the regional street and road system during development of future RTPs.

Significance After Mitigation

While improved mobility will result from implementation of the projects contained in the RTP, some significant unavoidable impacts, considering the regional minimum LOS policy of "D" will occur. LOS deficiencies will result along a number of regional street and highway segments and associated intersections because of the inability to widen such facilities due to funding and other constraints even with RTP projects. It is anticipated that even with implementation of the Project significant LOS deficiencies will continue therefore; this impact would be considered significant and unavoidable.

Results of the LOS deficiencies along the regionally significant system under the No Project Alternative are provided in Chapter 4 and Appendix _ of the 2011 RTP.

The resultant 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 Fresno 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 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 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 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 3.14.2

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

The overarching goal for the Project is to develop a fully integrated, multi-modal transportation system to serve as a catalyst to enhance the quality of life enjoyed by the current and future residents of Fresno 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.

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.*
- *A statement of the EIR's intended uses.*

See CEQA Guidelines, Section 15124.

2.1 PURPOSE

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

Requirement to Prepare a Subsequent EIR

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

- Substantial changes are proposed in the project which will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects.
- Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR or Negative Declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects.
- New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete or the Negative Declaration was adopted, shows any of the following:
    - The project will have one or more significant effects not discussed in the previous EIR or negative declaration.
    - Significant effects previously examined will be substantially more severe than shown in the previous EIR.
    - Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative.
    - Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

In this case, Fresno COG understands that 2011 RTP improvement projects will change or the timing of those projects will change. As a result of these changes, rather than prepare a complete new EIR, Fresno COG desires to use the previous EIR and update/change sections to address RTP project changes, as well as greenhouse gas/global warming (Climate Change) issues.

2.2 PROJECT LOCATION

Fresno County is located in California's Central San Joaquin Valley (reference Figure 2-1). Encompassing 5,963 square miles, the County is situated near the geographic center of the State along State Route (SR) 99, approximately 220 miles north of Los Angeles. The County has an altitude near Fresno of 365 feet above sea level to 14,000 feet above sea level in the Sierra Nevada. As of 2008, Fresno County had an estimated population of approximately 931,098

2.3 PROJECT CHARACTERISTICS

The project, as defined by CEQA Statutes, Section 21065, is the preparation of the 2011 revision of the RTP. Fresno 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, and Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). The RTP must also meet Transportation Conformity for the Air Quality Attainment Plan per 40 CFR Part 51 and 40 CFR Part 93. In addition, the RTP must address requirements set forth in Assembly Bill 32, the California Global Warming Solutions Act of 2006. Finally, the California Transportation Commission has prepared guidelines (most recently adopted by the Commission on September 20, 2007 plus an Addendum addressing Climate Change and Greenhouse Gas Emissions adopted by the Commission on May 29, 2008) to assist in the preparation of RTPs pursuant to Section 14522 of the Government Code.

As the designated Regional Transportation Planning Agency (RTPA), Fresno 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 May 2007, which addressed transportation improvement projects, programs, and funding reflected in the 2004 RTP together with additional funding from the proposed (now approved) ½ Cent Sales Tax Measure Extension (Measure "C"). Measure "C" did receive the 2/3rds voter approval required in order to pass in the November 2006 election. The 2011 revision to the RTP has been prepared to address possible environmental impacts resulting from its implementation and 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 SEIR. The RTP is also used as a transportation planning document by each of the sixteen member jurisdictions of Fresno COG. The members include the County of Fresno and the cities of Clovis, Coalinga, Firebaugh, Fowler, Fresno, Huron, Kerman, Kingsburg, Mendota, Orange Cove, Parlier, Reedley, San Joaquin, Sanger, and Selma.

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. Additional areas of emphasis and policy initiatives in the 2011 RTP include Climate Change (including a Climate Change Element), Congestion Management Process, Environmental Justice, Goods Movement, and Blueprint Planning. In addition, the 2011 RTP includes updated project lists and updated performance measures.

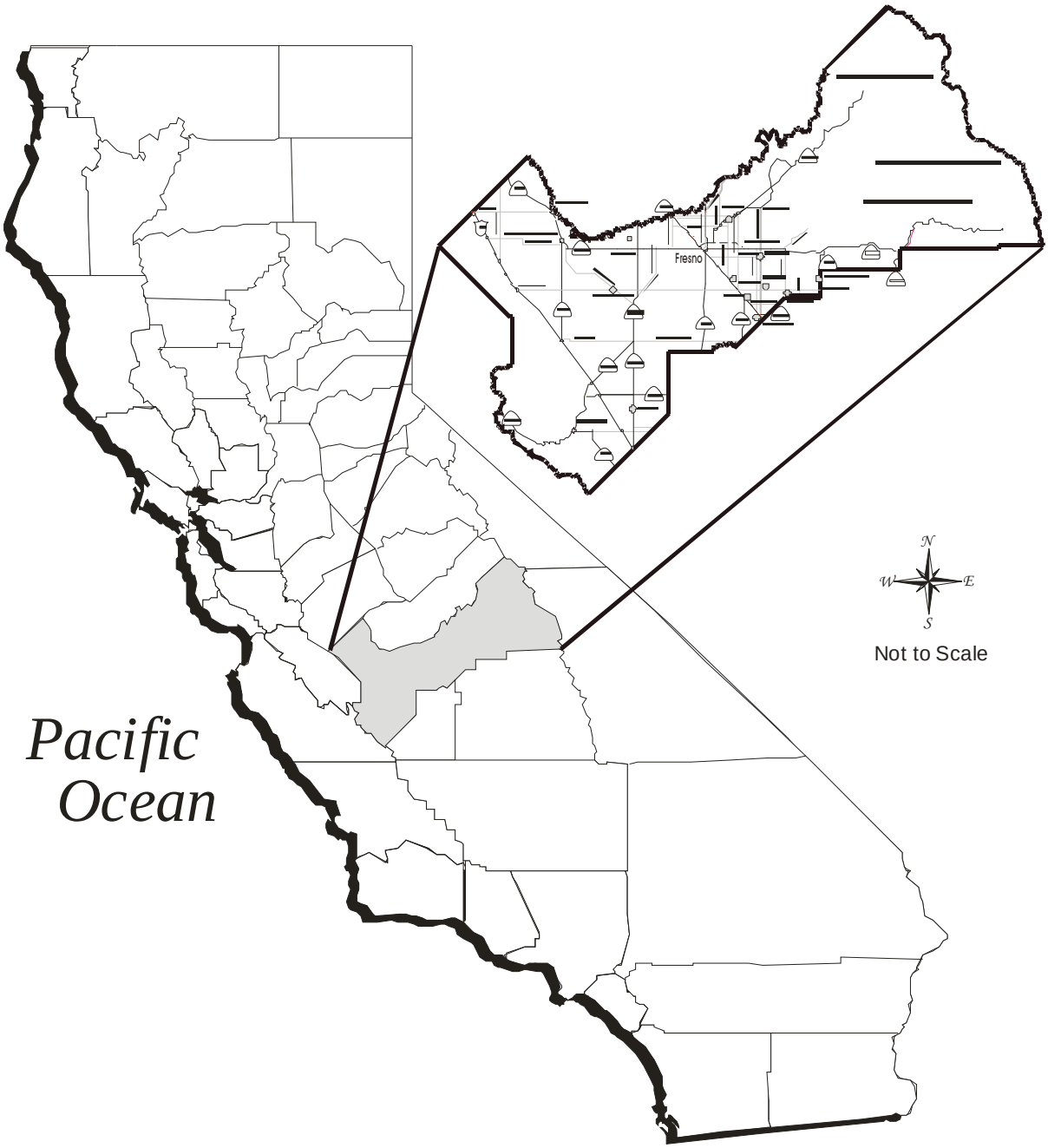


FIGURE 2-1
Fresno COG 2011 RTP Draft SEIR
Location of Fresno County
In California

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 2-1) 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 the RTP; they are, however addressed and analyzed for their feasibility in this Subsequent EIR, as required by California Environmental Quality Act (15126(d), 15125.6(a)). From the Draft Subsequent EIR, the alternatives are identified and described and projects that deliver the most benefit were selected.

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

The Constrained Program of Projects (reference Table 2-1 and Figures 2-2 through 2-4) 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 Fresno region's compliance with state and federal air quality rules. The Unconstrained Program of Projects (reference Chapter 5 of the 2011 RTP) incorporates the region's unbudgeted "vision". These projects represent alternatives that could be moved to the constrained program if support for an individual project remains strong and if project funding is identified.

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

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

Each element in the RTP addresses proposed actions to implement the goals and policies identified in Chapter 3 of the RTP – Policy Element. These actions outline specifically how the goals of the Plan will be accomplished.

TABLE 2-1
Regionally Significant Projects

Agency	Project Location	Project Limits	Completion Date	Project Length	Project Type	Total Cost Estimate
Caltrans	Ashlan	Grade separation @ UPRR & SR 99 interchange	2035	0.5	Interchange Improvements	$7,600,000
Caltrans	SR 180	SR 41to SR 168	2014	15	Construct Braided Ramps	$63,000,000
Caltrans	SR 180 E	Temperance to Quality	2011	6.8	2 LU to 4 L Expressway on existing alignment	$73,971000
Caltrans	SR 180 E	Quality to Trimmer Springs	2018	2.6	2 LU to 4 L Expressway on 4 L ROW	$66,900,000
Caltrans	SR 180 E	Trimmer Springs to Frankwood	2020	3.2	2 LU to 4 L Expressway on 4 L ROW	$85,960,000
Caltrans	SR 180 W	James to Yuba	2018	2	Passing Lanes	$10,621000
Caltrans	SR 180 W	I-5 to junction SR 33/SR 180	2035	20.1	2 lane on new E-W alignment	$223,000,000
Caltrans	SR 198	Interchange at I-5	2025	0.5	Widen bridge to 4 lanes	$12,800,000
Caltrans	SR 41	McKinley to Shields	2011		Widen on Ramps at both interchanges	$8,200,000
Caltrans	SR 41	Bullard to Herndon	2012	1	Construct NB auxiliary lane	$5,143,000
Caltrans	SR 41	Kings County line to Elkhorn	2015	7.0	2 L Expressway to 4 L Expressway	$40,131000
Caltrans	SR 41	El Paso to Friant	2017	10	Add 1SB Auxiliary Lane	$13,970,000
Caltrans	SR 41	Ashlan to Shaw	2035	10	Add 1NB Auxiliary Lane	$7,000,000
Caltrans	SR 41	"O" Street to Shields	2035	3.0	Add NB Aux Lanes	$19,500,000
Caltrans	SR 99	Ashlan to 0.2 mile North of Grantland OC	2012	5.3	Widen from 4 L Freeway to 6 L Freeway	$38,350,000
Caltrans	SR 99	Tulare County Line to SR 201	2013	1	4 L Freeway to 6 L Freeway & Widen Bridge to 6 L	$31,800,000
Caltrans	SR 99	0.2 mile S/O Grantland to Fresno/Madera Co line (Actually Ave 7 in Madera)	2016	2.9	Widen 4 lane to 6 lane Freeway	$54,650,000
Caltrans	SR 99	Interchange at Veterans Blvd	2026	0.5	Construct Interchange	$32,000,000
Caltrans	SR 99	SR 99 and Cedar/North Ave.	2027	0.5	Upgrade Interchange	$72,500,000
Caltrans	SR 99	Central and Chestnut Interchange	2027	0.5	Upgrade Interchange	$72,500,000
Caltrans	SR 99	At American ave interchange	2027	0.5	Interchange Improvements	$32,600,000
Caltrans	SR 99	Interchange at Shaw	2035	0.5	Improve interchange	$86,000,000
Caltrans	SR 99	SR 43/Floral Rd Interchange	2035	0.5	Replace bridge structures and widen Floral	$10,000,000
City of Fresno	Alluvial	Maple to Willow	2030	10	2 LU to 4 LU	$1000,000
City of Fresno	American	Orange to Maple	2030	10	2 LU to 4 LD	$1200,000
City of Fresno	Annadale	Walnut to Elm	2018	1	2 LU to 4 LU	$1000,000
City of Fresno	Annadale	Marks to Hughes	2025	0.5	2 LU to 4 LD	$600,000
City of Fresno	Annadale	West Ave. to Walnut Ave.	2025	1	2 LU to 4 LD	$1000,000
City of Fresno	Armstrong	Burgan to Francher Creek Drive	2020	0.1	Unconstructed to 4 LD	$80,000
City of Fresno	Armstrong	Jensen to California	2025	1	2 LU to 4 LU	$1000,000
City of Fresno	Armstrong	California to Kings Canyon	2025	10	2 LU to 4 LU	$1000,000
City of Fresno	Armstrong	Belmont to Ashlan	2025	3.0	2 LU to 4 LU	$3,200,000
City of Fresno	Ashlan	Cornelia to Blythe	2015	0.5	2 LD to 4 LD	$650,000
City of Fresno	Ashlan	Maroa to Blackstone	2018	0.2	2, 3 and 4 LU to 4 LU	$500,000
City of Fresno	Ashlan	Bryan to Polk	2020	10	2LD to 4 LD	$1350,000
City of Fresno	Ashlan	Polk to Cornelia	2020	0.5	2 LU to 4 LD	
City of Fresno	Ashlan	Garfield to Grantland	2020	0.5	Unconstructed to 4 LD	$1000,000
City of Fresno	Ashlan	Grantland to Bryan	2025	0.5	2 L to 4 LD	$650,000
City of Fresno	Barstow	Bryan to Hayes	2015	0.5	Unconstructed to 4L	$700,000
City of Fresno	Barstow	Grantland to Bryan	2015	0.5	2 LU to 4 LU	$450,000
City of Fresno	Barstow	Garfield to Grantland	2020	0.5	2 LU to 4 LU	$450,000
City of Fresno	Barstow	Chestnut to Willow	2030	0.5	2 LU to 4 LU	$450,000
City of Fresno	Barstow	Maroa to Blackstone	2030	0.5	2 LU to 4 LU	$450,000
City of Fresno	Behymer	Maple to Chestnut	2012	0.5	2 LU to 4 LD	$400,000
City of Fresno	Belmont	Clovis to Fowler	2012	10	3 LD to 4 LD (add WB Lane)	$1700,000
City of Fresno	Belmont	Fowler to Armstrong	2020	0.5	3 LU to 4 LD (add WB lane)	$500,000
City of Fresno	Belmont	Armstrong to Temperance	2025	0.5	2 LU to 4 LD	$900,000
City of Fresno	Belmont	Brawley to SR 99	2025	1	2 LU & 4LU to 4 LD	$1700,000
City of Fresno	Belmont	Grantland to Brawley	2030	3	2 LU to 4 LD	$3,600,000
City of Fresno	Blythe	McKinley to Ashlan	2025	2	2 LU to 4 LD	$3,400,000
City of Fresno	Blythe	Whites Bridge to McKinley	2025	2.0	2 LU to 4 LD	$2,200,000
City of Fresno	Brawley	Palo Alto to Herndon	2010	0.3	2 LU to 4 LD	$300,000
City of Fresno	Brawley	McKinley to Parkway	2012	2.0	2 LU to 4 LD	$1000,000
City of Fresno	Brawley	S of Shaw to Ashlan	2015	10	2 LU to 4 LD	$1000,000
City of Fresno	Brawley	California to Belmont	2020	2.0	2 LU to 4 LU	$2,000,000
City of Fresno	Bryan	Herndon to Spruce	2013	0.3	2 LU to 4 LD	$510,000
City of Fresno	Bryan	Barstow to Bullard	2020	0.5	2 LU to 3 LU	$600,000
City of Fresno	Bryan	Clinton to Shaw	2025	3	2 LU to 4 LU	$2,700,000
City of Fresno	Bryan	Belmont to McKinley	2030	1	Unconstructed to 4LD	$1000,000
City of Fresno	Bryan (Bullard Diag)	Herndon to Cresta	2015	0.6	2L to 4 LD	$600,000
City of Fresno	Bryan (Bullard Diag)	Cresta to Veterans	2015	0.2	Unconstructed to 4 LD	$300,000
City of Fresno	Bullard	Grantland to Bryan	2010	0.5	2 L to 4L	$700,000
City of Fresno	Bullard	Cornelia to .36 mi./E/O Figarden	2015	13	2 LU to 4 LU	$1000,000
City of Fresno	Bullard	Garfield to Grantland	2025	0.5	2 LU to 4 LU	$500,000
City of Fresno	Bullard	Fruit to Palm	2030	0.5	4 LU to 4LD	$2,000,000

TABLE 2-1
Regionally Significant Projects
(CONTINUED)

Agency	Project Location	Project Limits	Completion Date	Project Length	Project Type	Total Cost Estimate
City of Fresno	Bullard	Blackstone to Fresno	2030	0.5	4 LD to 6 LD	$5,000,000
City of Fresno	Bullard Diagonal	Carnegie to Veterans	2015	0.6	Unconstructed to 4 LD	$800,000
City of Fresno	Butler	East to Peach	2030	3	2 LU to 4 LU (eliminate bottleneck sections)	$2,700,000
City of Fresno	California	Fruit to West	2010	0.5	2 lane and 3 lane to 4 lane divided	$11,872,000
City of Fresno	California	Armstrong to Temperance	2015	0.5	Unconstructed to 4 LU	$1800,000
City of Fresno	California	Fruit to Ventura	2019	10	2 LU to 4 LD	$2,200,000
City of Fresno	California	Fowler to Armstrong	2020	0.1	Unconstructed to 4 LU	$1800,000
City of Fresno	California	Brawley to Marks	2025	10	2 LU to 4 LD	$3,000,000
City of Fresno	California	Van Ness to Cedar	2025	15	2 LU to 4 LU	$2,000,000
City of Fresno	California	Hughes to west	2025	0.5	2 LU to 4 LD	$300,000
City of Fresno	Cedar	American to Central	2020	1	2 LU to 4 LD	$1200,000
City of Fresno	Cedar	Belmont to Turner	2025	0.12	Widen to 6 L	$1000,000
City of Fresno	Cedar	Central to Golden State	2030	12	2 LU to 4 LD	$2,040,000
City of Fresno	Central	Fig to Elm	2030	0.5	2 LU to 4 LD	$1900,000
City of Fresno	Central	Elm to Maple	2030	1	2 LU to 4 LD	$1000,000
City of Fresno	Cherry	North to Church	2030	15	2 LU to 4 LU	$1350,000
City of Fresno	Cherry	Central to North	2030	10	2 LU to 4 LU	$1000,000
City of Fresno	Chestnut	Behymer to Copper	2012	15	2 L to 4 LU	$1000,000
City of Fresno	Chestnut	Barstow to Bullard	2015	0.5	2 LU to 4 LU	$2,500,000
City of Fresno	Church	Clovis to Fowler	2010	10	Unconstructed to 4 LU	$1200,000
City of Fresno	Church	West to Elm	2018	2.7	2 LU to 4 LU	$2,430,000
City of Fresno	Church	Marks to West	2020	1	2 LU to 4 LU	$1200,000
City of Fresno	Church	Fowler to Temperance	2020	1	2 LU to 4 LU	$1200,000
City of Fresno	Church	Elm to Peach	2025	4	Widen to 4 lanes entire distance (some areas of 4 lanes exist.)	$4,800,000
City of Fresno	Clinton	Brawley to Marks	2015	1	2 LU to 4 LU	$900,000
City of Fresno	Clinton	Clovis to Fowler	2015	10	Widen to 4 lanes	$1200,000
City of Fresno	Clinton	Polk to Blyth	2020	10	Existing 2 L to 4 LU	$1800,000
City of Fresno	Clinton	Hayes to Polk	2025	0.5	2 LU to 4 LU	$450,000
City of Fresno	Clinton	Grantland to Hayes	2025	10	2 LU to 4 LU	$900,000
City of Fresno	Clinton	Fowler to Locan	2025	15	2 LU to 3 LU	$1500,000
City of Fresno	Copper	Friant to Cedar	2012	2	2 LU to 6 LD	$5,000,000
City of Fresno	Copper	Cedar to Willow	2020	1	2 LU to 4 LD	$3,500,000
City of Fresno	Copper	Cedar to Chestnut	2025	1	4 LD to 6 LD	$1500,000
City of Fresno	Cornelia	Shields to Ashlan	2015	0.5	2 LU to 4 LU	$2,000,000
City of Fresno	Cornelia	McKinley to Shields	2025	3	2 LU to 4 LU	$2,000,000
City of Fresno	Cornelia	Belmont to McKinley	2030	10	2 LU to 4 LU	$2,000,000
City of Fresno	Dakota	Fowler to Temperence	2015	10	2 LU to 4 LU	$2,000,000
City of Fresno	Dakota	Polk to Valentine	2025	2.0	2 LU to 4 LU	$1800,000
City of Fresno	Dakota	Hayes to Polk	2030	0.5	2 LU to 4 LU	$2,000,000
City of Fresno	Dante	Bullard to Cornelia	2020	0.4	2 LU to 4 LU	$100,000
City of Fresno	Dante	Cornelia to Salinas	2025	0.3	Unconstructed to 4L	$600,000
City of Fresno	Divisadero	SR 41 on/off ramps	2020		Additional SB off lane and dual lefts on Divisadero at NB on ramp	$2,000,000
City of Fresno	East	Church to Butler	2025	1	2 LU to 3 LU	$1000,000
City of Fresno	East Ave	Central to Jensen	2020	2.1	2 LU to 3 LU	$2,200,000
City of Fresno	Elm	Central to North	2020	1	2 LU to 4 LD	$1000,000
City of Fresno	Fig (M L K)	North to Annadale	2018	0.5	2 LU to 4 LU	$600,000
City of Fresno	Fig (M L K)	Central to North	2018	10	2 LU to 4 LU	$1000,000
City of Fresno	Fig (M L K)	Jensen to Church	2018	0.5	2 LU to 4 LU	$600,000
City of Fresno	Fowler	Kings Canyon to Belmont	2012	10	2 LU to 4 LD, need right-of-way	$3,500,000
City of Fresno	Fowler	Jensen to Hamilton	2020	13	2 LU to 4 LD	$600,000
City of Fresno	Fowler	Belmont to Gould Canal	2025	3	2 LU to 4 LU	$5,000,000
City of Fresno	Fowler	Hamilton to Kings Canyon	2030	1	2 LU 4 LD	$600,000
City of Fresno	Francher Creek	Renn to Fowler	2012	0.15	Unconstructed to 2 LD	$300,000
City of Fresno	Francher Creek	Fowler to Armstrong	2020	0.8	Unconstructed to 2 LD	$900,000
City of Fresno	Friant	Shepherd to Copper	2025	2.4	4 LD to 6 LD	$18,000,000
City of Fresno	Friant	SR 41 to Audubon	2025	0.5	6 LD to 8 LD	$3,000,000
City of Fresno	Fruit	North to Jensen	2017	10	2 LU to 4 LU	$1000,000
City of Fresno	Fruit	Jensen to California	2017	10	2 LU to 4 LU	$1000,000
City of Fresno	G Street	Divisidero to Belmont	2025	0.6	Construct 4-lane facility on new alignment	$1000,000
City of Fresno	Garfield	Shields to Herndon	2015	4.0	2 LU to 4 LU	$4,200,000
City of Fresno	Gettysburg	Grantland to Polk	2015	15	Unconstructed to 4 LU	$1800,000
City of Fresno	Gettysburg	Polk to Cornelia	2020	0.5	Unconstructed to 2 LU	$650,000
City of Fresno	Gettysburg	Grantland to Garfield	2020	0.5	2 LU to 4 LU & realignment	$600,000
City of Fresno	Golden State	Shaw to Ashlan	2015	13	2L to 4LI	$1300,000

TABLE 2-1
Regionally Significant Projects
(CONTINUED)

Agency	Project Location	Project Limits	Completion Date	Project Length	Project Type	Total Cost Estimate
City of Fresno	Golden State	Herndon to Veterans	2020	1	2 L to 4 L	$1000,000
City of Fresno	Golden State	Veterans to Shaw	2020	18	2 L to 4 L	$1800,000
City of Fresno	Grantland	Shields to Ashlan	2020	10	2 LU to 6 LD	$4,000,000
City of Fresno	Grantland	Belmont to Shields	2020	10	2LD to 4 LD	$1000,000
City of Fresno	Grantland	Shaw to Parkway	2030	15	2 LU to 4 LD	$1800,000
City of Fresno	Grantland	Shaw to Veterans	2030	0.5	2 LU to 4 LU	$600,000
City of Fresno	Grantland/Veteran's Blvd	Ashlan to Gettysburg	2015	0.5	New 6 LD Superarterial	$1500,000
City of Fresno	Hamilton	Armstrong to Temperance	2015	0.5	2 LU to 3 LU	$200,000
City of Fresno	Hayes	Shaw to Barstow	2015	0.5	Unconstructed to 4 LU	$600,000
City of Fresno	Hayes	Vererans Blvdl to Spruce	2018	0.6	2 LU to 4 LU	$720,000
City of Fresno	Hayes	Dakota to Shaw	2020	15	2 LU to 4 LU	$1350,000
City of Fresno	Hayes	McKinley to Dakota	2025	15	2 LU to 4 LU	$1350,000
City of Fresno	Hayes	Belmont to McKinley	2025	10	2 LU to 4 LU	$900,000
City of Fresno	Herndon	Marks to Valentine	2010	0.3	4 LD to 6 LD	$1900,000
City of Fresno	Herndon	SR 99 to Weber	2010	0.3	2 LU to 4 LD	$3,200,000
City of Fresno	Herndon	SR 41to Fresno	2015	0.2	Add new WB auxiliary lane for SB on-ramp	$1500,000
City of Fresno	Herndon	Valentine to Brawley	2017	0.5	4 L D to 6 LD	$2,000,000
City of Fresno	Herndon	Polk to Weber	2017	15	4 LD to 6 LD	$2,000,000
City of Fresno	Herndon	Milburn to Polk	2017	0.6	4 LD to 6 LD	$3,500,000
City of Fresno	Herndon	Brawley to Milburn	2020	0.9	2 LD to 6 LD	$3,000,000
City of Fresno	Hughes	Neilsen to McKinley	2015	15	2 LU to 4 LD	$3,000,000
City of Fresno	Hughes	Church to Whites Bridge	2020	15	2 LU to 4 LU	$1500,000
City of Fresno	Hughes	Church to North	2020	15	Unconstructed to 4 LU	$1500,000
City of Fresno	Jensen	Fruit to Martin Luther King Blvd	2015	15	2 LU to 4 LD	$1500,000
City of Fresno	Jensen	Cherry to Clovis	2020	4.5	4 LD to 6 LD	$25,000,000
City of Fresno	Jensen	Marks to Fruit	2025	15	2 LU to 4 LD	$3,000,000
City of Fresno	Jensen	Clovis to McCall	2025	5	4 LD to 6 LD	$4,000,000
City of Fresno	Kings Canyon	Chestnut to Fowler	2015	3	2 LU to 4 LD	$1000,000
City of Fresno	Kings Canyon	Armstrong to Temperance	2016	1	2 LU to 4 LD	$1000,000
City of Fresno	Locan	Clinton to Clovis CL (Dakota Align)	2016	11	2 LU to 3 LU	$980,000
City of Fresno	Maple	Behymer to .1mile N/O Behymer	2012	0.1	Complete NB Through Lane	$100,000
City of Fresno	Maple	Shepherd to Perrin	2015	10	2 LU to 4 LU	$900,000
City of Fresno	Maple	Perrin to Plymouth Way	2015	0.3	2 LU to 4 LU	$300,000
City of Fresno	Maple	Shepherd to Teague	2015	10	2 LU to 4 LU	$900,000
City of Fresno	Maple	Alluvial to Herndon	2015	0.5	2 LU to 4 LU	$600,000
City of Fresno	Maple	International to Copper	2020	0.5	2 LU to 4 LU	$600,000
City of Fresno	Maple	Teague to Nees	2025	0.5	2 LU to 4 LU	$600,000
City of Fresno	Maple	Nees to .2 mile south	2025	0.2	3 LU to 4 LU	$300,000
City of Fresno	Marks	Weber to Dakota	2015	0.5	2 LU to 3 LU	$350,000
City of Fresno	Marks	Jensen to Whitesbridge	2020	2	2 LU to 4 LD	$3,000,000
City of Fresno	Marks	Neilsen to McKinley	2020	15	2 LU to 4 LD	$2,400,000
City of Fresno	Marks	McKinley to Parkway	2020	10	2 LU to 4 LD	$1900,000
City of Fresno	Marks	North to Jensen	2025	10	2 LU to 4 LU	$1300,000
City of Fresno	McKinley	Fowler to Temperance	2020	10	Unconstructed to 4 LD	$2,000,000
City of Fresno	McKinley	Temperance to Locan	2020	0.5	2 LU to 4 LD	$700,000
City of Fresno	McKinley	Grantland to Golden State	2025	5.0	2 LU to 4 LD widen SR 99 bridge	$15,000,000
City of Fresno	McKinley	Sunnyside to Fowler	2025	0.75	Unconstructed to 4 LU	$2,000,000
City of Fresno	Minnewawa	Grove to Church	2025	0.3	Unconstructed to 3 LU	$500,000
City of Fresno	Minnewawa	Jensen to Grove	2025	0.25	2 LIU to 3 LU	$250,000
City of Fresno	Nees	Maple to Willow	2015	1	3 LU to 4 LD	$800,000
City of Fresno	Neilson	Brawley to Marks	2022	1	2 LU to 3 LU	$800,000
City of Fresno	Neilson	Blythe to Brawley	2022	0.5	Unconstructed to 3 LU	$400,000
City of Fresno	Neilson	Tielman to G/Divisadero	2025	0.8	2 LU to 3 LU	$600,000
City of Fresno	North	Cedar to Chestnut	2020	10	2 LU to 4 LU	$1500,000
City of Fresno	North	Marks to West	2020	0.5	2 LU to 4 LD	$1000,000
City of Fresno	North	Hughes to West	2020	0.5	2 LU to 4 LD	$1000,000
City of Fresno	North	West to Walnut	2020	1	2 LU to 4 LU	$2,000,000
City of Fresno	North	Walnut to Hwy 41	2020	125	2 LU to 4 LD	$2,500,000
City of Fresno	North	Orange to Cedar	2030	0.5	2 LU to 4 LD, improve SR 99 interchange	$12,500,000
City of Fresno	Olive	SR 99 to Hayes	2025	3.8	2 LU to 4 LU	$3,420,000
City of Fresno	Olive	Grantland to Hayes	2025	1	2 LU to 4 LD	$1000,000
City of Fresno	Olive	Clovis to Temperence	2025	2.0	2 LU to 4 LU	$1800,000
City of Fresno	Orange	American to Central	2020	10	2 LU to 4 LU	$900,000
City of Fresno	Orange	Central to Hwy 99	2020	12	2 LU to 4 LU	$1600,000
City of Fresno	Orange	Jensen to Ventura	2030	2.0	2 LU to 4 LU	$1800,000

TABLE 2-1
Regionally Significant Projects
(CONTINUED)

Agency	Project Location	Project Limits	Completion Date	Project Length	Project Type	Total Cost Estimate
City of Fresno	Parkway Drive	Shaw to Barstow	2020	0.5	2 LU to 4 LD	$1,000,000
City of Fresno	Peach	Kings Canyon to Belmont	2015	1	2 LU to 4 LD	$10,000,000
City of Fresno	Peach	Jensen to Butler	2020	15	2 LU to 4 LD	$1,500,000
City of Fresno	Peach	North to Jensen	2025	1	2 Ld to 4 LD	$700,000
City of Fresno	Polk	Bullard to Herndon	2012	1	2 LU to 4 LU	$900,000
City of Fresno	Polk	Gettysburg to Shaw	2015	0.5	2 LU to 4 LD	$5,000,000
City of Fresno	Polk	Olive to Belmont	2015	0.5	Unconstructed to 4 LD	$1,000,000
City of Fresno	Polk	Olive to McKinley	2015	0.5	2 LD to 4 LD	$500,000
City of Fresno	Polk	Shields to Gettysburg	2025	15	2 LU to 4 LD	$1,500,000
City of Fresno	Polk	McKinley to Shields	2025	10	2 LU to 4 LD	$1,000,000
City of Fresno	Santa Fe	Palo Alto to Figarden	2012	0.5	2 LU to 4 LD	$850,000
City of Fresno	Shaw	SR 99 to Brawley	2025	14	4 LD to 6 LD	$2,000,000
City of Fresno	Shaw	Veterans Blvd to Golden State	2030	0.8	2 LU to 6 LD	$4,000,000
City of Fresno	Shaw	Garfield to Veterans Blvd	2030	0.8	2 LU to 4 LD	$1,000,000
City of Fresno	Shepherd	Cedar to Maple	2020	0.5	2 LU to 4 LD	$500,000
City of Fresno	Shepherd	Chestnut to Willow	2020	0.5	2 LD to 4 LD	$500,000
City of Fresno	Shields	Cornelia to Parkway	2012	19	2 LU to 4 LD	$3,000,000
City of Fresno	Shields	Sunnyside to Fowler	2015	0.4	2 LU to 4 LD	$1,000,000
City of Fresno	Shields	Grantland to Cornelia	2025	2.5	2 LU to 4 LD	$2,500,000
City of Fresno	Shields	Garfield to Grantland	2025	0.5	2 LU to 4 LD	$1,000,000
City of Fresno	Sierra	SR 41 Bridge to Fresno	2015	0.2	2 LU to 4 LU	$500,000
City of Fresno	Sierra-Dante	Bullard Diagonal to Carnegie	2015	15	Unconstructed to 4 LU	$1,800,000
City of Fresno	Sierra-Dante	Polk to Escalon	2015	0.5	2 LU to 4 LU	$300,000
City of Fresno	Spruce	Bryan to Hayes	2015	1	2 LU to 4 LU	$1,200,000
City of Fresno	SR99 @ Montery St Bridge	Broadway to Golden State	2012	1	Update closed bridge structure Closed 6 LD to Open 4 LD	$1,800,000
City of Fresno	Sunnyside	Clinton to Weldon	2030	0.25	Unconstructed to 4 LU	$500,000
City of Fresno	Teague	Chestnut to Willow	2012	0.5	2 LU to 4 LU (add WB Lane)	$350,000
City of Fresno	Temperance	Jensen to Belmont	2025	3.0	2 LU to 6 LD	$10,000,000
City of Fresno	Temperance	Belmont to Dakota	2025	2.5	2 LU to 6 LD	$8,000,000
City of Fresno	Tulare	Clovis to Argyle	2012	0.3	Unconstructed to 4 LU	$600,000
City of Fresno	Valentine	McKinley to Parkway Dr	2012	14	2 LU to 4 LU	$1,260,000
City of Fresno	Valentine	Ashlan to Gettysburg	2015	0.5	2 LU to 4 LU	$500,000
City of Fresno	Valentine	Weber to Ashlan	2020	0.3	2 LU to 4 LU	$270,000
City of Fresno	Valentine	California to Whites Bridge	2020	2	2 LU to 4 LU	$1,900,000
City of Fresno	Ventura	SR 99 to SR 41	2015	1	4 LU to 4 LD	$19,400,000
City of Fresno	Veterans Blvd	Bullard-Bryan to Herndon	2025	0.7	Widen from 4 LD to 6 LD	$1,100,000
City of Fresno	Veterans Blvd	Shaw to Barstow	2030	0.6	Widen from 4 LD to 6 LD	$1,100,000
City of Fresno	Veterans Blvd	Gettyburg to Shaw	2030	0.6	Unconstructed to 6 LD	$3,000,000
City of Fresno	Veteran's Blvd	Shaw to Barstow	2020	0.6	New 4 LD Superartrial	$5,500,000
City of Fresno	Veteran's Blvd	Barstow to Bullard-Bryan	2020	10	New 6 LD Superarterial	$106,000,000
City of Fresno	Veteran's Blvd	Bullard-Bryan to Herndon	2020	0.7	New 4 LD Suprarterial	$4,500,000
City of Fresno	Walnut	North to California	2020	2	2 LU to 4 LD	$4,000,000
City of Fresno	Walnut Connector	Fresno to Walnut	2014	11	Unconstructed to 4 LD	$1,540,000
City of Fresno	Weber	Marty to Clinton	2030	2.1	2 LU to 4 LD	$3,000,000
City of Fresno	Weber	Belmont to Olive	2030	0.7	2 LU to 4 LD	$1,000,000
City of Fresno	Weldon	Sunnyside to Fowler	2030	0.5	Unconstructed to 3 LU	$600,000
City of Fresno	West	Jensen to Kearney	2020	15	2 LU to 4 LD	$3,000,000
City of Fresno	West	North to Jensen	2020	10	2 LU to 4 LD	$900,000
City of Fresno	West	Kearney to Whites Bridge	2020	0.5	2 LU to 4 LU	$900,000
City of Fresno	Whitesbridge	Valentine to West	2020	15	2 LU to 4 LD	$3,000,000
City of Fresno	Whitesbridge	State Rt 180 E/O Brawley to Valentine	2020	0.5	2 LU to 4 LD	$500,000
City of Fresno	Willow	Herndon to Alluvial	2012	0.5	2 LU to 6 LD	$800,000
City of Fresno	Willow	Nees to Powers	2012	0.75	2 LD to 6 LD	$1,000,000
City of Fresno	Willow	Jensen to Church	2012	0.5	2 LU to 4 LU	$500,000
City of Fresno	Willow	Shepherd to Copper	2015	2	2 LD to 6 LD	$3,000,000
City of Fresno	Willow	Church to Butler	2025	1	2 LU to 4 LU	$500,000
City of Fresno	Willow	North to Jensen	2030	10	2 LU to 4 LU	$900,000
City of Fresno	Willow	Kings Canyon to Olive	2030	15	2 LU to 4 LU	$1,400,000
Clovis	Alluvial	Willow to Adler (700 feet east)	2012	0.2	2 LU to 3 LU w/2 @WLTL	$250,000
Clovis	Alluvial	Fordham to Fowler	2014	0.5	2 LU to 3 LU W/2WLT Complete incomplete portions	$825,000
Clovis	Alluvial	Armstrong to 1/4 east(McKelvy)	2014	0.3	2 LD to 4 LD	$1,400,000
Clovis	Alluvial	Halifax to Minnewawa	2015	0.3	2 LU to 3 LU w/@WLTL	$508,000
Clovis	Alluvial	Fowler to Armstrong	2018	0.5	2 LU to 3 LU W/ 2 WLTL	$2,000,000
Clovis	Alluvial	Temperance to Locan	2020	0.5	Unconstructed to 4 LD	$2,500,000

TABLE 2-1
Regionally Significant Projects
(CONTINUED)

Agency	Project Location	Project Limits	Completion Date	Project Length	Project Type	Total Cost Estimate
Clovis	Alluvial	Locan to Nees	2020	0.4	Unconstructed to 4 LD	$3,100,000
Clovis	Alluvial	Nees to Dewolf	2025	0.35	Unconstructed to 4 LD	$2,500,000
Clovis	Armstrong	Alluvial to Nees	2012	0.5	2 LU to 3 LU 2WLTL	$950,000
Clovis	Armstrong	Herndon to Alluvial	2015	0.5	2 LU to 4 LU	$1,600,000
Clovis	Armstrong	Ashlan to Gettysburg	2015	0.5	2 LU to 4 LU	$1,400,000
Clovis	Ashlan	Armstrong to Temperance	2010	0.3	3 LD to 4 LD Incl Median Landscaping, some portions already exist as 4LD	$1,100,000
Clovis	Ashlan	Leonard to Highland	2015	1.0	2 LU to 4 LD	$5,600,000
Clovis	Ashlan	Dewolf to Leonard	2015	0.5	3 LU to 4 LD	$1,100,000
Clovis	Ashlan	Highland to Thompson	2018	0.5	2LU to 4LD	$2,800,000
Clovis	Ashlan	Thompson to McCall	2020	0.5	2LU to 4LD	$2,800,000
Clovis	Barstow	Locan to Kaweah	2015	0.15	3 LU to 3 LU (2WLTL)	$530,000
Clovis	Barstow	Kaweah to DeWolf	2018	0.35	2 LU to 2L w/ 2WLTL	$670,000
Clovis	Barstow	Dewolf to Leonard	2020	0.5	2 LU to 2 LU w/2WLTL	$2,500,000
Clovis	Behymer	Willow to Minnewawa	2020	1.0	2 LU to 4 LD	$7,000,000
Clovis	Behymer	Minnewawa to Clovis	2025	0.5	2 LU to 4 LD	$3,400,000
Clovis	Bullard	Locan to DeWolf	2015	0.5	2LU to 4LD	$2,800,000
Clovis	Bullard	Megan to Locan	2015	0.1	3 LD to 4 LD	$200,000
Clovis	Bullard	DeWolf to Leonard	2020	0.5	2 LU to 4 LD	$2,800,000
Clovis	Bullard	Leonard to Highland	2025	0.5	2 LU to 4 LD	$2,800,000
Clovis	Clovis	Nees to Teague	2012	0.5	3 LD to 4 LD	$1,100,000
Clovis	Clovis	Copper to Shepherd	2020	2	Construct new 6 L divided arterial	$14,922,000
Clovis	Clovis	Behymer to Copper	2025	1	Unconstructed to 6 LD	$8,100,000
Clovis	Copper	Willow to Clovis	2025	1.5	2 LU to 4 LDU	$10,000,000
Clovis	Copper-Clovis Couplet	Construct Beltway Interchange at Clovis and Shepherd	2025	1.6	Unconstructed to 6 LD	$10,000,000
Clovis	Dakota	Leonard to Highland	2025	0.5	Unconstructed to 3 LU (2WLTL)	$2,500,000
Clovis	Dewolf	Teague to Nees	2012	0.4	Unconstructed to 2 L	$1,500,000
Clovis	DeWolf	Ashlan to Gettysburg	2015	0.5	2 LU to 4 LU 2WLTL	$2,000,000
Clovis	DeWolf	Barstow to Bullard	2015	0.5	2 LU to 4 LD 2WLTL	$3,000,000
Clovis	DeWolf	Gould Canal to Ashlan	2015	0.5	2 LU to 3 LU 2WLTL	$2,000,000
Clovis	DeWolf	Loyola to Teague	2015	0.2	2 LD TO 2 LD plus bike lanes	$700,000
Clovis	DeWolf	Gettysburg to Shaw	2018	0.5	2 LU to 4 LD 2WLTL	$1,200,000
Clovis	DeWolf	Shaw to Barstow	2018	0.5	2 LU to 4 LD w/2WLTL	$1,200,000
Clovis	Fowler	Griffith to Ashlan	2012	0.3	2 LU to 4 LD	$53,000
Clovis	Fowler	Nees to (Shepherd) Enterprise Bridge	2020	1.0	2 LU to 4 LD	$6,000,000
Clovis	Gettysburg	Armstrong to 600' east	2015	0.1	2 LU to 4 LU w/2WLTL	$300,000
Clovis	Gettysburg	Main to Dewolf	2015	0.3	2 LU to 4 LU w/2WLTL	$500,000
Clovis	Gettysburg	Dewolf to Leonard	2018	0.5	2 LU to 4 LU 2WLTL	$3,000,000
Clovis	Gettysburg	Leonard to Highland	2020	0.5	Unconstructed to 5 LU 2WLTL	$3,000,000
Clovis	Gettysburg	Highland to Thompson	2025	0.5	Unconstructed to 4 LU 2WLTL	$3,000,000
Clovis	Herndon	Clovis to Sunnyside	2011	0.5	4 LD to 6 LD	$2,200,000
Clovis	Herndon	Sunnyside to Fowler	2013	0.4	4 LD to 6 LD	$1,325,000
Clovis	Herndon	Temperance to Locan	2017	0.5	2 LU to 6 LD	$2,600,000
Clovis	Herndon	Locan to DeWolf	2017	0.5	2 LU to 4 LD	$2,700,000
Clovis	Herndon	DeWolf to McCall	2025	2.0	2 LU to 4 LD	$12,000,000
Clovis	Highland	Gettysberg to Shaw	2025	0.5	Unconstructed to 2 L w/2WLTL	$2,500,000
Clovis	Highland	Dakota to Ashlan	2025	0.5	2 LU to 3 LU w/2WLTL	$2,500,000
Clovis	International	Willow to Clovis	2020	1.5	Unconstructed to 4 LD	$7,001,000
Clovis	Leonard	Ashlan to Gettysburg	2015	0.5	2 LU to 4 LD	$2,753,000
Clovis	Leonard	Shaw to Bullard	2015	1.5	2 LU to 4 LD	$6,496,000
Clovis	Leonard	South of Dakota to Ashlan	2015	0.6	2 LU to 4 LD	$3,001,000
Clovis	Leonard	Gettysburg to Shaw	2015	0.5	2 LU to 4 LD	$3,495,000
Clovis	Leonard	10 m N of Shaw (Bullard) to Tollhouse	2030	18	Unconstructed to 4 LD	$12,000,000
Clovis	Locan	Shaw to Barstow	2012	0.5	2 LU to 3 LU 2 2WLTL	$1,000,000
Clovis	Locan	Barstow to Bullard	2012	0.5	2L to 2 LU w/2WLTL	$940,000
Clovis	Locan	Nees to Shepherd	2015	1.0	2 LU to 4 LU	$2,036,000
Clovis	Locan	Bullard to Herndon	2025	1.0	2 LU to 4 LU	$5,000,000
Clovis	Locan	Gould Canal to Holland	2025	0.7	2 LU to 3 LU 2WLTL	$2,398,000
Clovis	McCall	Shaw to Bullard	2030	1	2 LU to 6 LD	$7,000,000
Clovis	McCall	Bullard to Herndon	2030	1	2 LU to 6 LD	$7,000,000
Clovis	McCall	Griffith to Shaw	2030	1.3	2 LU to 6 LD	$9,000,000
Clovis	McCall	Herndon to Shepherd	2035	2	Unconstructed to 6 LD	$17,000,000
Clovis	Minnewawa	Fir to Alluvial	2010	0.6	3 L to 4 LD	$800,000
Clovis	Minnewawa	Shepherd to Behymer	2015	1.0	2 LU to 4 LD	$6,000,000
Clovis	Minnewawa	Behymer to Copper	2025	1.0	2 LU to 4 LD	$6,000,000

TABLE 2-1
Regionally Significant Projects
(CONTINUED)

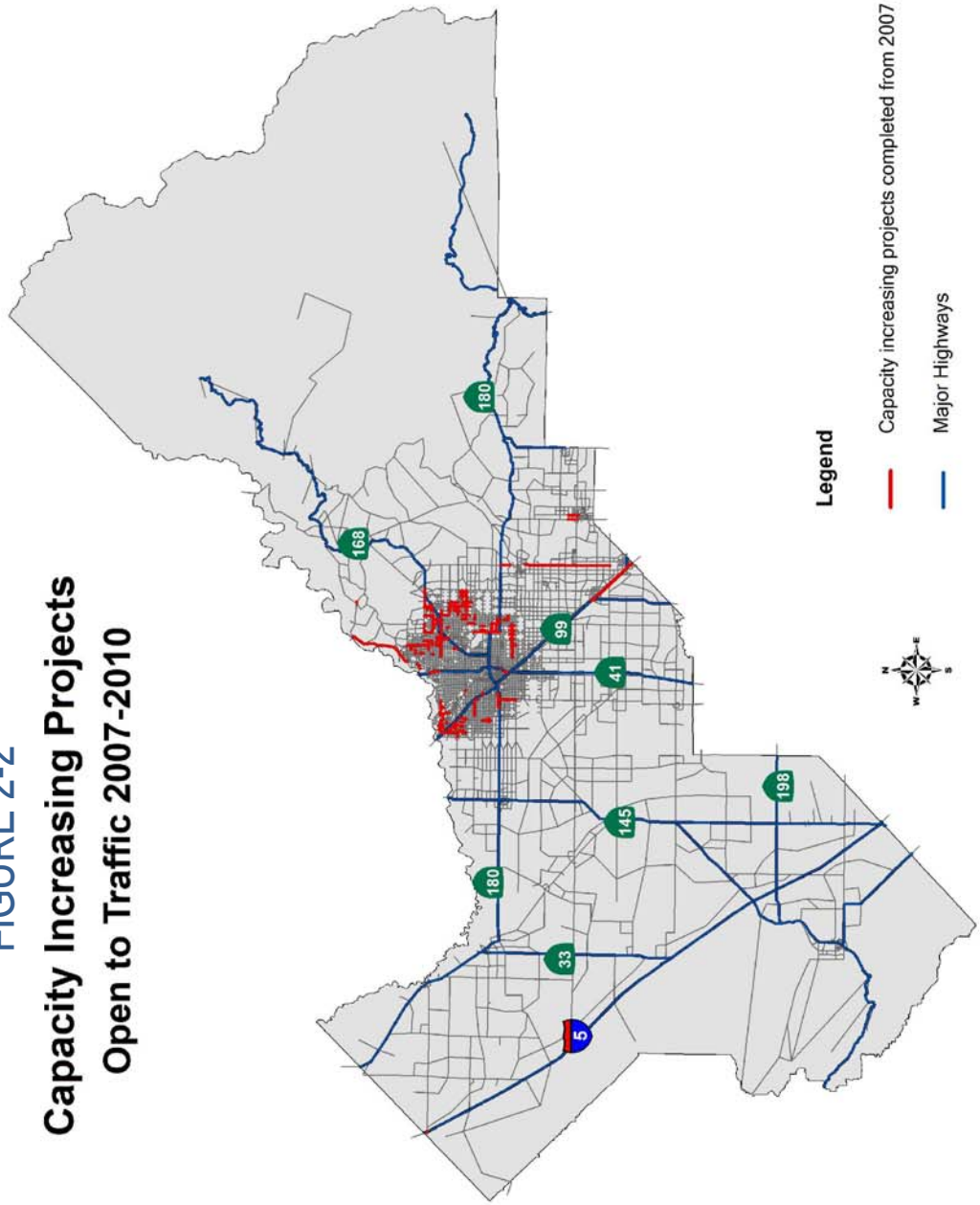
Agency	Project Location	Project Limits	Completion Date	Project Length	Project Type	Total Cost Estimate
Clovis	Nees	Cindy to Chapel Hill	2012	0.1	3 LU to 4 LD	$200,000
Clovis	Nees	Sunnyside to Armstrong	2013	10	2 LU to 3 LU with 2WLTL	$0
Clovis	Nees	Armstrong to Temperance	2015	0.3	3 LD to 4 LD	$500,000
Clovis	Nees	Temperance to Locan	2015	0.5	2 LU to 4 LD	$3,000,000
Clovis	Nees	Minnewawa to Clovis	2018	0.4	3 LD to 4 LD	$993,000
Clovis	Nees	Clovis to Armstrong	2018	0.6	2 LU to 4 LD Complete incomplete portions	$4,000,000
Clovis	Nees	Sunnyside to Fowler	2018	0.5	2 LU to 4 LD Complete incomplete portions	$2,000,000
Clovis	Nees	Fowler to Armstrong	2018	0.5	2 LU to 4 LD complete incomplete portions	$2,500,000
Clovis	Nees	Locan to Alluvial Alignemnt	2020	0.4	Unconstructed to 4 LD	$3,000,000
Clovis	Peach	Sierra To Magill Couplet	2012	0.4	2 LU to 4 LU	$293,000
Clovis	Peach	Shepherd to Behymer	2015	2.0	2 LU to 4 LU	$6,750,000
Clovis	Peach	Behymer to Copper	2025	10	2 LU to 4 LD	$6,750,000
Clovis	Perrin	Willow To Peach	2020	0.5	Unconstructed to 4 LU	$2,500,000
Clovis	Perrin	Peach to Minnewawa	2020	0.5	Unconstructed to 4 LU	$2,500,000
Clovis	Perrin	Minnewawa to Clovis	2020	0.5	Unconstructed to 34 LU	$2,500,000
Clovis	Shaw	Clovis to Temperance	2012	2	4 LD to 6 LD	$311,000
Clovis	Shaw	Carson to Locan	2012	0.25	4 LU to 6 LD	$850,000
Clovis	Shaw	Locan to Main	2012	0.25	2 LU to 6 LD	$1,700,000
Clovis	Shaw	Highland to McCall	2015	10	2 LU to 6 LD	$7,000,000
Clovis	Shaw	DeWolf to Highland	2015	10	2 LU 6 LD	$7,000,000
Clovis	Shepherd	Willow to 1/2 Mile east	2012	0.3	2 LU to 3 LD	$1,623,000
Clovis	Shepherd	Clovis to Fowler	2018	10	2 LU 3 LD	$3,600,000
Clovis	Shepherd	Tollhouse to Del Rey	2020	15	2 LU to 4 LD	$12,000,000
Clovis	Shepherd	Temperance to Dewolf	2020	1	3 LD to 4 LD	$2,000,000
Clovis	Shepherd	Willow to Clovis	2020	15	3 LU to 4 LD	$3,000,000
Clovis	Shepherd	Armstrong to Temperance	2025	0.5	3 LU to 4 LD	$1,000,000
Clovis	Shepherd	Clovis to Fowler	2025	1	3 LD to 4 LD	$5,412,000
Clovis	Shepherd	Fowler to Armstrong	2025	0.5	3 LD to 4 LD	$1,000,000
Clovis	Sunnyside	Fallbrook to Nees	2012	0.1	2 LU to 4 LU	$470,000
Clovis	Sunnyside	Bullard to Tollhouse	2030	0.2	2 LU to 4 LU	$1,000,000
Clovis	Temperance	Ashlan to Gettysburg	2010	0.3	2 LU to 4 LD	$500,000
Clovis	Temperance	650' N/O Ashlan to Gould Canal	2010	0.3	2 LU to 4 LD	$565,000
Clovis	Temperance	Center and outside travel lane improvements north and south of Sierra	2015	0.5	Widen to 2 lanes in each direction	$603,500
Clovis	Temperance	Bullard to Herndon	2015	1	2 LU to 4 LD	$4,123,000
Clovis	Temperance	Enterprise Canal to Nees (Just south of Nees)	2015	0.1	3 LD to 4 LD	$712,000
Clovis	Temperance	Nees to Lexington	2015	0.1	3 LD to 4 LD	$550,000
Clovis	Temperance	Heritage Ln to Shepherd	2015	0.7	3 LU to 4 LD	$1,500,000
Clovis	Thompson	Ashlan to Shaw	2020	1	Unconstructed to 5 LU 2WLTL	$4,986,000
Clovis	Tollhouse	Locan to Shepherd	2018	2.5	2 LU to 4 LU	$10,000,000
Clovis	Tollhouse	Third to Herndon	2020	13	2 LU to 4 LU	$410,000
Clovis	Villa	Herndon - Fir	2015	0.5	2 LU to 4 LD	$400,000
Clovis	Willow	Alluvial to 1/8 mile north	2012	0.1	2 LU to 6 LD	$508,000
Clovis	Willow	Shephard to Perrin	2015	0.5	2 LU to 6 LD - Clovis side only	$2,200,000
Clovis	Willow	Perrin to Behymer	2018	0.5	2 LU to 6 LD - Clovis side only	$2,200,000
Clovis	Willow	Barstow to Copper	2020	3.5	Complete widening to 6 LD where needed and add bike lanes	$230,000
Clovis	Willow	Behymer to International - Clovis side only	2020	0.5	4 LD to 6 LD - Clovis side only	$1,000,000
Clovis	Willow	International to Copper	2025	0.5	4 LD to 6 LD - Clovis side only	$1,200,000
County of Fresno	Academy	North to california	2010	2	Reconstruct 4 lane road	$5,370,000
County of Fresno	American	SR 41 to SR 99	2030	3.3	2 LU to 4 LD	$6,500,000
County of Fresno	Auberry	Copper to Millerton (W)	2030	8.9	2 LU to 4 LD	$51,050,000
County of Fresno	Central	SR 99 to Golden State	2015	0.5	2 LU to 4 LD	$1,000,000
County of Fresno	Central	Willow to Clovis	2030	2.3	2 L to 4 LD	$3,000,000
County of Fresno	Central	Goldenstate to Willow	2030	0.4	2 LU to 4 LD	$1,000,000
County of Fresno	Chestnut	American to SR 99	2030	0.7	2 LU to 4 LD	$2,000,000
County of Fresno	Friant	Lost Lake Park to North Fork Road	2010	17	2 LU to 4 LD	$4,100,000
County of Fresno	Manning	Alta to Hill	2025	3	2LU to 4 LD	$6,000,000
County of Fresno	Manning	Buttonwillow to Alta	2030	15	2 LU to 4 LD	$7,000,000
County of Fresno	Millerton	Friant to Table Mountain	2015	4.5	2 LU to 4 LD	$31,950,000
County of Fresno	Millerton Road	Table Mountain Rd to Auberry Road	2030	12	2 LU to 4 LD	$8,340,000
County of Fresno	Mountain View	Bethel to e/o Smith (Tulare County Line)	2013	4.0	2 LU to 4 LD	$30,000,000
County of Fresno	Reed	Reedley City Limit(South ave.) to Goodfellow	2030	3.0	2 LD to 4 LD	$6,000,000
County of Fresno	Shaw	McCall to Academy	2030	3.0	2 LU to 4 LD	$10,000,000
County of Fresno	Willow	Shepherd to Copper	2030	2	2 LU to 6 LD East (County Side) Side Only	$3,112,500
County of Fresno	Willow	Copper to Friant	2030	2	2 LU to 4 LD	$3,112,500

TABLE 2-1
Regionally Significant Projects
(CONTINUED)

Agency	Project Location	Project Limits	Completion Date	Project Length	Project Type	Total Cost Estimate
Kerman	Kearney	Goldenrod to 0.25 m W of Goldenrod	2010	0.25	2 LU to 2 LD	$425,000
Kerman	Siskiyou	E to California	2010	0.6	2 LU to 2 LD	$600,000
Kerman	Vineland	At SJVRR	2010		Extend Vineland S across SJVRR tracks & abandon existing crossing at California	$130,000
Kingsburg	10th Avenue	Kern St. to Clarkson Ave.	2010	0.5	2 LU to 4 LU	$175,000
Kingsburg	10th st (Academy)	Sierra to Stroud	2020	0.5	2 lanes to 4 lanes	$750,000
Kingsburg	18th	Mountain View to Stroud	2025		2 lanes to 4 lanes	$1,875,000
Kingsburg	18th Avenue/Mendocino	Stroud ave. to SR 99	2015	1.7	2 LU to 4 LU	$682,000
Kingsburg	Academy Parkway	Mountain View to Simpson	2020	1.8	New 4 lane Expressway	$4,500,000
Kingsburg	Bethel	SR 99 to Kern	2015		2 lanes to 4 lanes	$2,250,000
Kingsburg	Caruthers	Bethel to Madsen	2030	2	Unconstructed to 4 LU	$5,000,000
Kingsburg	Clarkson	Greenwood to Rd 12	2025	1.5	2 lanes to 4 lanes	$1,750,000
Kingsburg	Kamm Ave	Simpson to 10th (Academy)	2015		2 Lanes to 4 Lanes	$2,500,000
Kingsburg	Kamm Avenue	10th Ave. (Academy) to Madsen	2015	1	2 LU to 4 LU	$350,000
Kingsburg	Kamm Avenue	Golden State Blvd to 10th Ave.	2020	1.0	2 LU to 4 LU	$950,000
Kingsburg	Kern	Rafer Johnson Drive to 10th	2015		2 to 4 lanes	$500,000
Kingsburg	Kern	Rafer Johnson Dr to Bethel	2015	0.5	2 to 4 lanes	$350,000
Kingsburg	Sierra St.	Bethel Ave. to Sixth St.	2015	0.8	2 LU to 4 LU	$1,250,000
Kingsburg	Simpson Street	Stroud Ave. to Sierra St.	2020	0.7	2 LU to 4 LU	$800,000
Kingsburg	Stroud	10th to Simpson	2015		2 lanes to 4 lanes	$1,250,000
Parlier	Tuolumne Street	Fett Avenue to Orit Avenue	2025	0.1	Construct new 2 lane facility	$450,000
Reedley	Columbia	Parlier to Manning	2020	0.6	2 LU to 2 LD	$2,400,000
Reedley	Dinuba Ave	Frankwood to Zumwalt	2015	1.5	2 LU to 4 LD	$5,243,000
Reedley	Eleventh	Manning to Reed	2015	1.4	2 LU to 4 LD	$6,100,000
Reedley	Frankwood	I st. to Floral	2015	1.0	2 LU to 4 LD (Sections)	$4,095,000
Reedley	I St.	Manning to Dinuba	2015	1.2	4 LU to 4 LD	$510,000
Reedley	North	Reed to East	2015	0.8	2 LU to 4 LD	$2,800,000
Reedley	Reed	I Street to South Ave	2013	1	2 LU to 4 LD	$5,000,000
Selma	Mountain and SR 99 Overcrossing	Mountain View at SR 99 Overcrossing	2020	0.4	Interchange improvements. Widen overcrossing 2 L to 4 L and improve on/off ramps	$45,000,000
					TOTAL:	**$2,275,530,500**

FIGURE 2-2

Capacity Increasing Projects
Open to Traffic 2007-2010



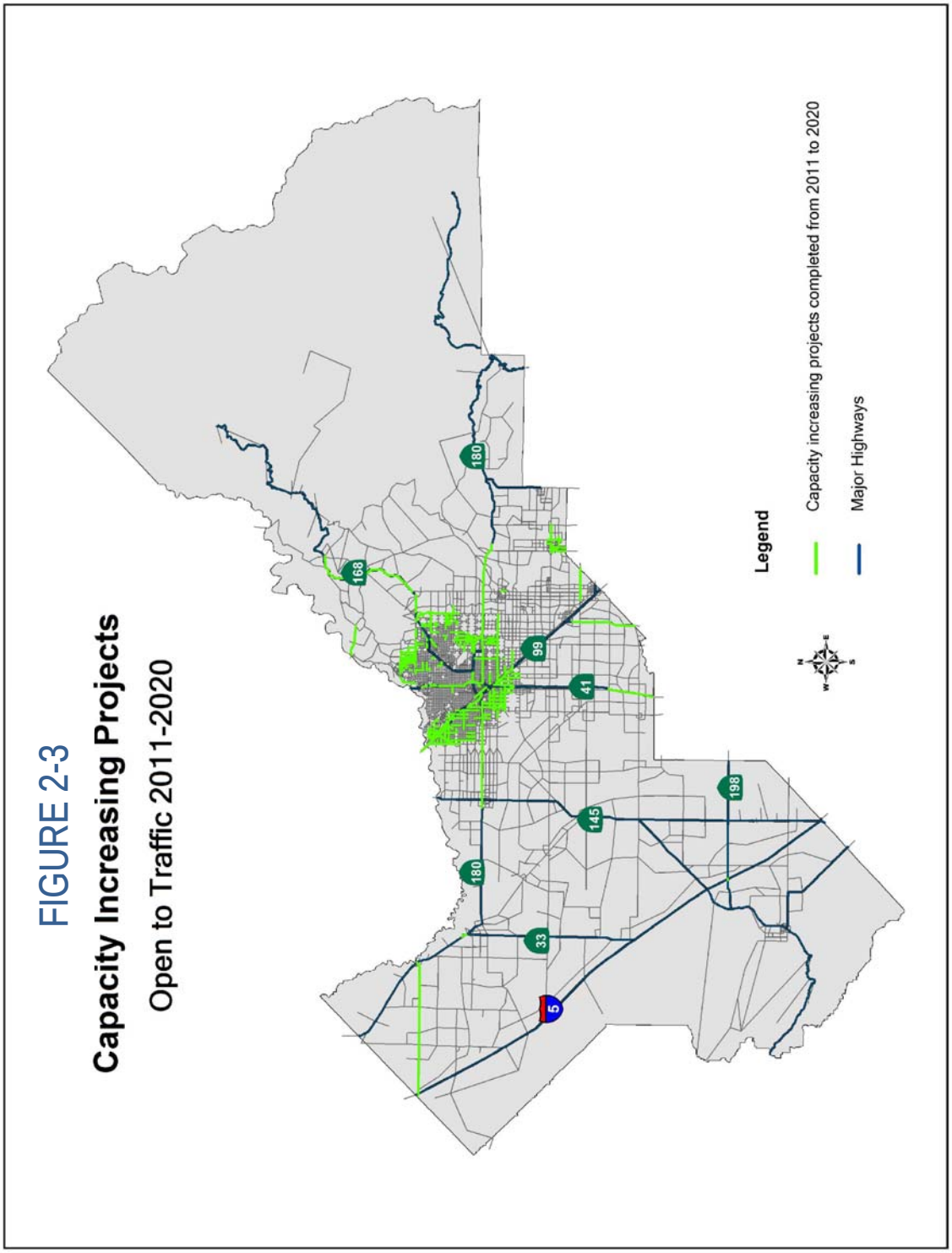


FIGURE 2-3
Capacity Increasing Projects
Open to Traffic 2011-2020
5
33
180
145
198
99
41
168
180
Legend
Capacity increasing projects completed from 2011 to 2020
Major Highways

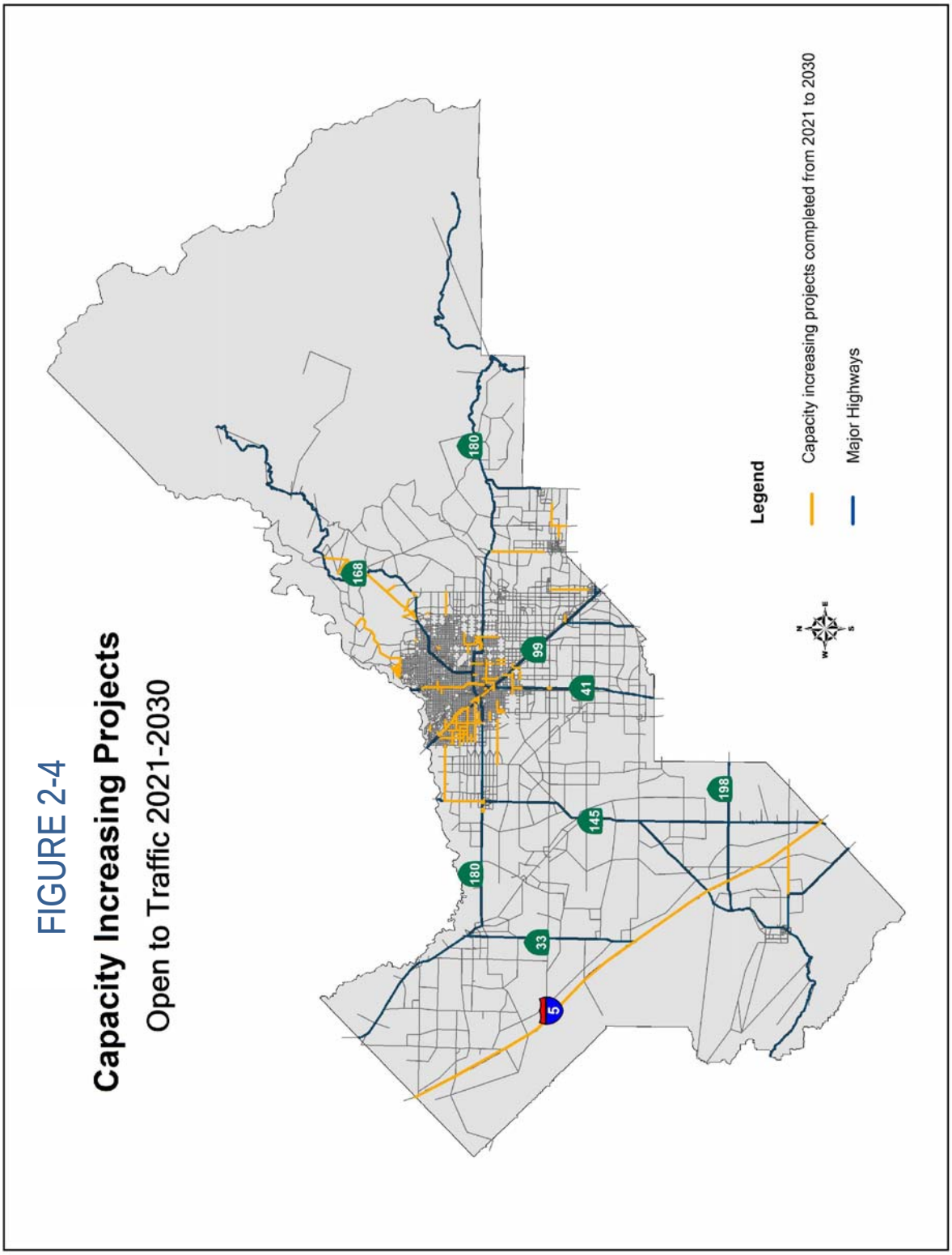


FIGURE 2-4
Capacity Increasing Projects
Open to Traffic 2021-2030
5
33
180
145
198
41
99
168
180
Legend
Capacity increasing projects completed from 2021 to 2030
Major Highways

2.4 2011 RTP PROVISIONS

Each mode available for the movement of people and goods in and through Fresno County is addressed in the 2011 RTP along with transportation/air quality strategies, as listed below:

- Goals, Objectives, and Policies; Chapter 3
- Multimodal: Section 4.2
- Highway, Streets, and Roads: Section 4.3
- Urban Mass Transportation: Section 4.4
- Rural Area Public Transportation & Social Service Transportation: Section 4.5
- Aviation: Section 4.6
- Non-Motorized: Section 4.7
- Rail: Section 4.8
- Congestion Management: Section 4.9
- Air Quality: Section 4.10
- Environmental Mitigation: Section 4.11
- Climate Change: Chapter 5
- Financial Element: Chapter 6
- Public Outreach: Chapter 7

Each mode of transportation strategy is presented in a separate section of Chapter 4 of the 2011 RTP, which includes an inventory of the existing system, an assessment of needs, and proposed actions. The latter will be divided into short-range (0-3 years) and long-range (4-24 years). Proposed actions will be based upon projected travel demand and appropriate policy. The short-range measures will ultimately form the basis for the Regional Transportation Improvement Program (RTIP) and the Federal Transportation Improvement Program (FTIP).

Federal transportation legislation requires that long-range transportation plans must include only those projects which have a "reasonably available" source of funding. This financially "constrained" list will define those projects which are programmed between 2010/11 to 2014/15. The RTP also defines projects which are deemed necessary, but do not have identified funding sources, in order to show a complete picture of transportation systems which are needed for the future vitality of the region.

Transportation Conformity with the Clean Air Act Amendments of 1990

The Federal Clean Air Act (FCAA) requires states to improve coordination between transportation and air quality planning and set a firm schedule for attainment of air quality standards. Federal transportation legislation strengthens the reforms of the Federal Clean Air Act Amendments (FCAAA) by requiring that local and state plans in nonattainment areas, such as in the San Joaquin Valley, be consistent with, or conform to, the State Implementation Plans (SIP) for clean air. The financially constrained projects listed in the action plan elements below, have been analyzed to assure that their implementation will contribute to the attainment of improved air quality consistent with adopted SIPs.

The 2011 Regional Transportation Plan's goals, objectives and policies have been developed to serve as the foundation for both short and long-term planning. For purposes of the RTP the following definitions will apply.

Goals, Objectives, and Policies

The 2011 RTP contains the following goals, objectives, and policies to implement the RTP over the 25 year planning period. A definition of each is provided below:

- Goal: A "Goal" is the end toward which the overall effort is directed; it is timeless, general and conceptual. The intent of the overall goals is to provide a framework for subsequent objectives and policies

- Objective: An "Objective" provides clear, concise guidance to obtaining the goal. Objectives are successive levels of achievement in movement toward a goal. They are results to be achieved by a stated point in time. Individual objectives are capable of being quantified and realistically attained

- Policy: A "Policy" is a direction statement that guides present and future decisions on specific actions. Policies should support the attainment of objectives

General Transportation Goals, Objectives, and Policies

Goal: Provide for an integrated multimodal transportation system which serves the needs of a growing and diverse population for transportation. access to jobs, housing, recreation, commercial and community service.

Objective: Develop an integrated multimodal transportation network.

Policies:

- *Develop a regional streets and highways system that has a balanced mix of high-speed and local corridors which are functional and flexible for intermodal use.*
- *Integrate transportation modes through a coordinated transportation systems management process.*
- *Provide for efficient, multi-destination trips through the coordination of urban and rural public transportation.*
- *Develop bicycle and pedestrian facilities as an alternative to the automobile.*
- *Develop air transportation facilities and services complementary to other modes of transportation.*
- *Decisions on improvements to the transportation system shall take into account the effective use of all modes and facilities.*
- *Encourage and support the development of methods to expand and enhance transit services and to increase the use of such services.*

- *Public transit, ridesharing, carpooling, bicycle and pedestrian access, park-and-ride facilities, and other transportation demand strategies shall be pursued as preferred alternatives where feasible.*
- *Encourage jurisdictions to ensure that the needs of pedestrians, bicyclists, and individuals with disabilities are given special attention in the project review process.*
- *Support the coordination or consolidation (where appropriate) of transit and paratransit services to provide more effective, efficient and accessible transportation services.*
- *Encourage local jurisdictions to provide incentives to encourage transit, ridesharing and bicycling.*

Goal: Maintain and improve the safety and efficiency of existing facilities as the basic system which will meet existing and future travel demands.

Objective: Complete and maintain a transportation network which provides operational efficiency in conjunction with meeting the functional requirements of existing and future travel demands.

Policies:

- *Develop a convenient, safe and efficient interface between transportation modes.*

- *Complete the planned freeway system to relieve congestion, and upgrade existing roads commensurate with growth.*
- *Manage the transportation system in a manner designed to increase operational efficiency, conserve energy and space, reduce air pollution and noise, and provide for effective goods movement, safety, personal mobility and accessibility.*
- *Establish a transportation network which provides for the coordination and connectivity of roads within the metropolitan area with roads outside the metropolitan area.*
- *Continue support for the preservation of existing transportation facilities and, where practical, ways to meet transportation needs by using existing transportation facilities more efficiently.*
- *Promote transportation network design standards which relieve congestion and prevent congestion from occurring where it does not yet occur.*
- *Maintain stringent safety requirements for all transportation modes.*
- *Identify those transportation problems where transportation systems management can be effective.*
- *Identify problem (hazardous) locations and implement counter measures for anticipated problems wherever possible.*

Goal: Provide support to the maintenance and expansion of transportation modes for the movement of people and goods within and through the region.

Objective: Develop a multimodal transportation network which facilitates and enhances the movement of people and goods in a manner which is economically beneficial to the region.

Policies:

- *Implement traffic flow improvements, maintenance and rehabilitation on existing corridors for efficient movement of people and goods.*
- *Pursue development of strategies and methods to enhance the efficient movement of freight through the multimodal network.*
- *Work cooperatively with the private sector to ensure that the collected information accurately reflects existing and forecasted conditions that are of importance from a freight transportation perspective.*
- *Strive to ensure that public and private transportation providers and other interested parties have a "reasonable opportunity" for input into the transportation planning process.*

Goal: Manage the financial resources which are available from government, the private sector, and users of the transportation system in a cost-effective manner to meet regional needs.

Objective: Procure and leverage federal, state and local transportation funding to the maximum degree possible, in order to develop a regional transportation network which serves the residents of the region in the most economical, effective and efficient manner possible.

Policies:

- *Pursue additional funding sources for development of major transportation programs and projects. Work with all interest groups to reach consensus and initiate an active public information program regarding transportation funds needed.*
- *Submit applications for any supplemental revenue sources that may become available.*

Goal: Work with local, state, and federal agencies to promote environmental sensitivity, energy efficiency, and sustainability in the development and management of our transportation system.

Objective: Development of a regional transportation network which is environmentally sensitive, maximizes energy efficiency, and promotes sustainability wherever possible.

Policies:

- *Evaluate the transportation system for air quality, energy and efficiency impacts.*
- *Strive to avoid or fully mitigate all significant impacts of new transportation facilities on environmentally sensitive areas and natural resources.*
- *Mitigate motor vehicle, railroad and airport related noise in populated areas.*
- *Encourage energy conservation through alternatives to single-occupancy vehicles, increased auto efficiency and facility design.*
- *Project level decisions should give priority to safety, air pollution, noise and energy considerations.*
- *Support the implementation of Transportation System Management, Transportation Demand Management, and Transportation Control Measures that reduce emissions on the circulation system.*
- *Continue participation in the transportation/air quality monitoring program for the State Implementation Plan with the San Joaquin Valley Unified Air Pollution Control District.*
- *Continue to participate in and support a coordinated transportation planning effort between the Regional Transportation Planning Agencies located in the San Joaquin Valley nonattainment air basin.*
- *Endeavor to ensure the consistency of regional transportation planning efforts with applicable Federal, State, and local energy conservation programs, goals, and objectives.*

Goal: Support cooperative efforts between local, state, federal agencies and the public to plan, develop and manage our transportation system.

Objective: Establish intergovernmental organizational relationships and lines of communication which foster an understanding and awareness of the overall impacts of transportation/land use/air quality decision making.

Policies:

- *Coordinate with other public agencies to ensure that the overall social, economic, energy and environmental effects of transportation decisions are understood by the general public.*
- *Work closely with local land use agencies to ensure that land use planning is coordinated with transportation planning to fully mitigate the traffic impacts of new development to the greatest degree possible.*
- *Existing and future land use plans of the communities within the region shall be recognized in the formulation of transportation decisions.*
- *Encourage and support mixed land use developments that encourage a jobs/housing balance and that make alternative modes more effective.*
- *Provide safe, efficient travel while supporting growth management policies to discourage premature urban fringe development.*
- *Work together with the appropriate public agencies to preserve right-of-way for construction of future transportation projects, including identification of unused right-of-way which may be needed for future transportation corridors and identification of those corridors for which action is most needed to prevent destruction or loss.*
- *Communicate with local land use agencies on the likely impacts of transportation policy decisions on land use and development; and strive for consistency (where appropriate) between transportation plans and programs and applicable land use and development plans.*

Highways, Streets and Roads

Goal: Establish an integrated highways, streets and roads network that provides for the efficient movement of both people and goods within Fresno County.

Objective: Develop and implement an integrated highways, streets and roads network that provides mobility for both urban and rural residents including the movement of goods.

Policies:

- *Improve the urbanized area circulation system including phased completion of the urban freeway network.*
- *Give priority to transportation improvements that accommodate travel within Fresno County.*
- *Continue development of safety, maintenance and operational improvements on the streets and highways network within Fresno County.*
- *Continue work with member agencies to ensure that the inter- and intra-county movement of agricultural commodities remains an important priority.*
- *Monitor levels of service on the streets and highways network within Fresno County to ensure safe and efficient movement of people and goods.*
- *Develop a convenient, safe and efficient interface between transportation modes.*

Goal: Make the most efficient use of available transportation revenues to enhance the highways and streets network.

Objective: Procure all possible federal, state and local transportation revenues related to development, maintenance and rehabilitation of the highways and streets network.

Policies:

- *Continue to pursue federal, state and local funding for both local streets and roads and state highways without modification to existing regional transportation planning policy.*
- *Continue close monitoring of the overall transportation financing issues at all levels of government to ensure that Fresno County agencies have the ability to react in a timely fashion to any financing strategies that may emerge.*
- *Continue to work closely with the State of California to develop some form of statewide transportation revenue stream that is equitable statewide.*

Goal: Maintenance of acceptable level-of-service standards for the highways, streets and roads network within Fresno county.

Objective: Provision of levels-of-service on the highways, streets and roads network that will allow for adequate movement of people and goods while at the same time meeting Federal and Transportation Conformity standards.

Policies:

- *Enhance communication between Fresno COG and local land use agencies so impacts on the regional transportation system can be adequately analyzed prior to and during the decision making process.*
- *Pursue revisions to legislation that would inappropriately penalize counties and cities located in non-attainment air pollution areas.*
- *Work cooperatively with the private sector to ensure that the mobility needs of the business community within Fresno County are addressed.*
- *Continue to participate in and support a coordinated transportation planning effort between Regional Transportation Planning Agencies located in the San Joaquin Valley as it relates to development of the highways, streets and roads network.*

- *Manage the highways, streets and roads network in a manner designed to increase operational efficiency, reduce air pollution and provide adequate mobility for both people and goods.*

Goal: Establish compliance with Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) as it relates to the streets and highways network.

Objective: Develop and implement SAFETEA-LU policies as they relate to the streets and highways network of Fresno County.

Policies:

- *Continue preservation of existing transportation facilities and, where practical, ways to meet transportation needs by using existing facilities more efficiently.*
- *Continue work with the appropriate governmental agencies on the National Highway System.*
- *Promote development of a highways, streets and roads network that provides for connectivity of the metropolitan network with the system outside the metropolitan network.*
- *Continue to preserve rights of ways for construction of future streets and highways projects including identification of unused right-of-way.*
- *Enhance the development of a highways and streets network which will relieve congestion and avoid congestion where it does not yet occur.*

<u>Mass Transportation</u>

Goal: Provide public transportation mobility opportunities to the maximum number of people in the region.

Objective: Continue to pursue expanded federal, state and local funding for both public and social service transportation.

Policies:

- *Provide a transit system that meets the public transportation needs of the service area.*
- *Provide transit services that serve low income, elderly, and disabled communities.*
- *Support the coordination and consolidation of social service transportation.*

Goal: Provide quality, convenient and reliable public transportation service.

Objective: Encourage safety, appropriate frequency of bus service, reasonable fares and the provision of adequate service to satisfy the transit needs which are reasonable to meet.

Policies:

- *Provide reliable and convenient public transit service.*
- *Provide clean, attractive and comfortable vehicles and facilities.*
- *Provide a safe system.*

Goal: Provide an efficient and effective public transportation system.

Objective: Consider advantages and disadvantages of projects, including economic, environmental and social factors.

Policies:

- *Maximize public transportation patronage.*
- *Minimize operating and capital expenses.*
- *Encourage the private sector to provide service when economically feasible.*

Goal: Promote public transit's service and image in community.

Objective: Provide complete and accurate information that makes public transportation "user friendly".

Policy:

- *Create and produce publications that promote the use of public transportation.*

Goal: Provide for an integrated multimodal transportation system which facilitates the movement of people and goods.

Objective: Develop a multimodal transportation network.

Policies:

- *Coordinate service to facilitate multimodal and inter-system transfers.*
- *Coordinate fare and transfer policies along with service information programs.*

Goal: Coordinate public transportation policies with land use and air quality policies.

Objective: Support transportation investments that work toward accomplishing air quality goals, optimize utilization of land and encourage a stable economic base.

Policies:

- *Provide incentives to reduce dependency on automobile travel without compromising travel mobility.*
- *Evaluate the transportation system for air quality, energy and efficiency impacts.*

<u>Aviation Goals</u>

Goal: Develop a fully functional and integrated air service and airport system that is complementary to the regional transportation system.

Objective: Maintain and improve the airport system in Fresno County.

Policies:

1. *Provide for the orderly and timely development of a system of airports adequate to meet the air transportation needs of the region.*
2. *Encourage air travel as an energy efficient mode of transportation.*
3. *Minimize airport related noise and other environmental problems.*
4. *Identify the general location of all public use airports by type, size, and the time frame that will be required to make air transportation reasonably accessible throughout the region, with particular emphasis on the need to minimize airport-related land use problems.*
5. *Coordinate airport planning with the Airport Land Use Commission and with State, County, and other local agencies in the areas of transportation, land use, economic development and resource utilization.*
6. *Adopt the Basic Utility Stage 1 classification, as defined by the Federal Aviation Administration, as the minimum standard for public use airports.*
7. *Prepare site selection studies for the location of new airports as appropriate.*
8. *Maintain Airport Master Plans, Airport Layout Plans, and land use environs area plans for all Fresno County public use airports.*

Non-Motorized Transportation Goals

Goal: Maximize bicycle ridership through recognition and integration of the bicycle as a valid transportation mode in transportation planning activities.

Policies:

- *Include bicycle transportation planning as an integral part of the Fresno COG's transportation planning program.*
- *Encourage and assist member agencies to develop new or update existing bicycle transportation plans which are integrated with the regional bikeways system and which provide for bicycle use as an alternative to the automobile for shorter trips.*
- *Encourage member agencies to include a bicycling section in all transportation-related documents including, but not limited to, circulation elements of general, community, specific, and redevelopment plans.*
- *Encourage and facilitate interagency cooperation and coordination in the development and implementation of bicycling plans and projects.*
- *Coordinate Fresno County's bikeways system with those of adjoining counties.*
- *Encourage member agencies to provide for bicycle-friendly development, including bicycle travel in new development or redevelopment plans and projects.*
- *Encourage member agencies to include bicycle parking requirements in all land-use/site development requirements that address automobile parking.*
- *Participate in efforts of member agencies and other groups and organizations to work with irrigation districts, railroads, and other owners of linear right-of-way that have the potential to accommodate bicycle facilities, the development of which would strengthen the Countywide bicycle transportation system.*

Goal: Safe, convenient, and continuous routes for bicyclists of all types which interface with and complement a multimodal transportation system.

Policies:

- *Support the development of a countywide system of designated bikeways that links communities, activity centers and regional recreational destinations and provides for all types of bicyclists.*
- *Encourage member agencies and Caltrans, to the extent feasible and practical, to maintain the regional bikeways system free of deterrents to bicycling such as debris, gravel, glass, leaves, and any other extraneous materials.*
- *Encourage member agencies to adopt policies or design standards to include accommodations for bicycle travel on all new construction, reconstruction, or capacity increasing projects on major roadways where reasonably feasible. Such accommodations may be made by a separate bike path, by bicycle lanes, or by a shared roadway. A shared roadway would include a wide outside lane or a paved shoulder.*
- *Encourage member agencies and Caltrans to develop, stripe and sign bikeways consistent with state design standards in order to develop a visually consistent, clear, simple and recognizable bikeways system with clearly defined travel areas and boundaries.*
- *Support member agency implementation of AB 1581, effective January 1, 2008, requiring that a traffic-actuated signal be installed and maintained so as to detect lawful bicycle traffic on the roadway.*
- *Encourage member agencies and Caltrans to install bicycle-safe drain grates.*
- *Encourage member agencies and Caltrans to give priority to bikeway projects that will link existing separated sections of the system and that will serve the highest concentration of bicyclists and destinations of highest demand.*
- *Encourage member agencies to provide bicycle parking facilities, including secured storage*

facilities where appropriate, at public and commercial areas, centers of employment, schools, recreational areas, air and bus terminals, major transit stops, and other places that attract large groups of people.

- *Encourage member agencies and Caltrans to provide support facilities on appropriate bikeways, including rest stops with restrooms, water, and tables.*
- *Encourage member agencies and Caltrans to install, to the extent feasible and practicable, trees along trails and bikeways that will provide shade on summer afternoons.*
- *Encourage local agencies and Fresno County Rural Transit Agency to establish bicycle-to-transit connections throughout the County, including bicycle park-and-ride facilities at transit centers to serve regional route use and the accommodation of bicycles on public transit.*
- *Assist member agencies to implement the Complete Streets Act by incorporating complete street considerations in the Valleywide Blueprint Implementation Roadmap.*

Goal: Improved bicycle safety through education and enforcement.

Policies:

- *Support the development and promotion of an education plan and program which increases awareness of the rights and behavior of bicyclists within the traffic environment.*
- *Support enforcement of traffic laws related to cyclist behavior and cyclist/motorist conflicts.*
- *Disseminate information to member agencies, school districts, and other appropriate agencies and organizations on model programs to increase bicycle helmet use and bicycle safety.*

Goal: Increased acceptance of bicycling both as a legitimate transportation mode on public roads and highways and as a transportation mode that is a viable alternative to the automobile.

Policies:

- *Maintain representation of the bicycling community on Fresno COG's Transportation Technical Committee.*
- *Encourage, through educational and promotional efforts, bicycling as a transportation mode which promotes cleaner air, eases traffic congestion, conserves nonrenewable sources of energy, and promotes health.*
- *Provide information to the public on the regional bikeway system and its support facilities.*
- *Encourage member agencies to work with major employers to provide incentive programs for bicycling including shower facilities, guaranteed ride home programs and mileage reimbursement for work-related bicycling miles.*
- *Publicize planning projects relating to bicycling through the dissemination of articles, newsletters, reports and other appropriate methods.*

Goal: Increased development of the regional bikeways system and related facilities by maximizing funding opportunities.

Policies:

- *Identify available bicycle funding sources and their requirements and provide this information to member agencies.*
- *Work with member agencies to define priorities for, and progress towards, implementation of the regional bikeway system.*
- *Disseminate information to member agencies and other interested groups regarding potential new bicycling project funding opportunities.*
- *Provide favorable comments on reviews of grant applications for projects that seek to enhance bicycling facilities.*

Rail Goals

Goal: Develop a safe, efficient and convenient rail system which serves the passenger and freight needs of the region and which is integrated with and complementary to the total transportation system.

Objective: Promote the growth of rail passenger and freight usage.

Policies:

- *Seek ways to relocate all mainline Burlington Northern Santa Fe passenger and freight rail traffic to the Union Pacific alignment through the City of Fresno or to an alignment west of the Fresno Metropolitan Area to assure smoother, faster and safer service.*
- *Consider development of a multimodal transportation terminal facility in, or in close proximity to, the Central Business District.*
- *Give high priority to grade separation construction programs.*
- *Close grade crossings of main lines with minor streets and alleys wherever possible to avoid unnecessary conflict.*
- *Protect grade crossings of main lines with automatic gates.*
- *Seek legislative changes to rail abandonment procedures to require that all lines proposed for abandonment be brought under public ownership as a precondition to abandonment.*
- *Consider all advantages and disadvantages of projects, including economic, environmental, and social factors.*
- *Endorse the following Amtrak San Joaquin Route passenger rail service improvements:*
  - *Additional train service for the San Joaquin Route.*
  - *Improved station facilities servicing the San Joaquins.*
  - *Additional direct train service to Sacramento.*
  - *Additional direct train service to the East Bay Area.*
  - *Direct train service to Los Angeles.*
- *Incorporate design awareness of multimodal transportation facilities in development of highway systems.*
- *Support planning for rail services at a similar level of detail as is currently done for roads.*
- *Support the planning and construction of a High Speed Rail System in the San Joaquin Valley which directly connects the major population centers within the Valley.*

Goal: Provide a transportation system that efficiently and effectively transports goods throughout Fresno County.

Objective: Increase the use of air and rail transportation and encourage an efficient truck transportation system.

Policies:

- *Encourage the multimodal movement of goods through Fresno County where possible.*
- *Recognize freight rail service in Fresno County as a significant transportation mode, providing service to industry.*
- *Special consideration should be given to transportation projects that improve the operational efficiency of goods movement and air quality.*

Air Quality Goals

Goal: Attainment and maintenance of federal and state air quality standards as set by the Environmental Protection Agency and the California Air Resources Board.

Objective: Implement all appropriate Transportation System Management, Transportation Demand Management, and Transportation Control Measure strategies as necessary to meet mandated state and federal clean air legislation.

Policies:

- *Implement all feasible strategies recommended in adopted State Implementation Plans (SIPs).*
- *Insure consistency between and among the goals, objectives, policies, and implementation measures of the Regional Transportation Plan, the Transportation Improvement Program, and State Implementation Plans.*

Objective: Integrate land use planning, transportation planning, and air quality planning to make the most efficient use of public resources and to create a more healthy and livable environment.

Policy:

- *Consider air quality when planning transportation systems to accommodate expected growth in the community.*

Goal: Support regional planning efforts in addressing federal and state air quality standards as well as California greenhouse gas legislation.

Objective: Participate and support a coordinated transportation planning effort between the eight Regional Transportation Planning Agencies, Caltrans, the San Joaquin Valley Unified Air Pollution Control District, the Federal Highway Administration, the Federal Transit Administration, the California Air Resources Board, and local agencies charged with land use planning.

Policies:

- *Coordinate air quality planning at the technical and policy level.*
- *Participate in the transportation/air quality modeling program for the State Implementation Plan with the San Joaquin Valley Unified Air Pollution Control District.*

Objective: Coordinate local air quality programs with regional programs and those of neighboring jurisdictions.

Policy:

- *Work with neighboring jurisdictions and affected agencies to address cross-jurisdictional and regional transportation and air quality issues.*

Objective: Educate and involve community members, especially those in the environmental justice community, in discussions of air quality programs and issues.

Policy:

- *Work with community members and organizations to provide outreach and involvement in relevant air quality issues.*

Goal: Provide for improved air quality through local planning and enforcement efforts regarding federal and state air quality standards as well as California greenhouse gas legislation.

Objective: Adopt and implement appropriate land use, transportation, and air quality plans and strategies.

Policies:

- *Support the efforts of the San Joaquin Valley Unified Air Pollution Control District to integrate appropriate policies and implementation measures identified in the Air Quality Guidelines for General Plans into local general plans.*

- *Support the air pollution enforcement and educational efforts of the San Joaquin Valley Unified Air Pollution Control District.*

Objective: Create a transportation system that will encourage the significant use of public transit, walking or bicycle use for residents' daily transportation trips.

Policies:

- *Consider air quality and mobility when reviewing any proposed change to the transportation system in the community.*
- *Encourage projects proposing pedestrian or transit oriented designs at suitable locations.*
- *Support funding for park and ride lots at suitable locations serving long distance and local commuters.*

Goal: Improve transportation mobility and operations by improving and utilizing transportation system management strategies which coordinate travel modes through operating, regulating, and service policies to achieve maximum efficiency and productivity for the whole circulation system.

Objective: Plan for a multimodal transportation system that meets the mobility needs of the community and improves air quality.

Policies:

- *Pursue and use state and federal funds earmarked for bicycle and transit improvements.*
- *Ensure that upgrades to existing roads (widening, curb and gutter, etc.) include bicycle and pedestrian improvements in their plans and implementation where appropriate.*
- *Encourage preservation of abandoned railroad right-of-way with no potential for use as light rail lines for use as bikeways and pedestrian paths.*
- *Work with cities to identify potential light rail corridors and ensure protection of the right-of-way from incompatible development.*
- *Support the use of suitable freeway and expressway right-of-way for light rail.*
- *Consider and implement measures to more fully utilize existing road networks prior to constructing more capacity.*

Objective: Improve vehicular flow and efficiency of the region's circulation system.

Policies:

- *Encourage traffic signal installation and synchronization programs in urbanized areas.*
- *Encourage removal of on-street parking in heavily congested areas where practical.*
- *Support installation of adequate left and right-turning pockets, as necessary.*
- *Encourage the improvements of geometrics at signalized intersections to improve turning for large vehicles and circulation flow.*
- *Support the installation of grade crossing improvements.*
- *Support freeway message signs and ramp metering programs.*

Goal: Improve transportation mobility and operations by improving and utilizing transportation demand management strategies which consist of managing human behavior regarding how, when, and where people travel.

Objective: Encourage use of alternate transportation modes, flex hours, and mixed land uses resulting in a jobs/housing balance.

Policies:

- *Support rideshare outreach and public information programs.*

- *Encourage employers to utilize flex hours, van pools, and telecommuting measures.*
- *Support mixed land use developments which encourage a jobs/housing balance.*
- *Plan for appropriately located transportation nodes to support public transit facilities.*
- *Encourage the development of bicycle and pedestrian circulation systems.*

Goal: Improve transportation mobility and operations by improving and utilizing transportation control measure strategies which consist of reducing vehicle trips, vehicle miles traveled, vehicle idling, traffic congestion, and increasing average vehicle ridership, to reduce motor vehicle emissions.

Objective: Encourage the reduction of vehicular trips traveled which will reduce emissions, congestion, fuel consumption, and associated impacts.

Policies:

- *Support the development of employer-based trip reduction practices.*
- *Support greater use of public transit systems through the provision of efficient and effective services.*
- *Increase inter-city rail ridership through the addition of Amtrak services on the San Joaquin Route.*
- *Support carpool and vanpool programs that reduce the use of single-occupancy vehicles.*
- *Support Caltrans and local agency development of park-and-ride lots and referrals to public transit.*

Goal: Reduce the consumption of and critical dependence upon non-renewable energy resources used in transportation.

Objective: Conserve fuel for mass transportation purposes by influencing personal travel behavior and by encouraging the development of alternative fuel sources.

Policies:

- *Support transportation programs which have the lowest feasible levels of energy consumption while meeting reasonable mobility needs.*
- *Promote ongoing voluntary fuel conservation actions which are economical and publicly acceptable.*
- *Encourage the development of alternative fuel sources that will decrease vehicle emissions through the use of cleaner burning fuels for internal combustion engines, or through the use of electricity as an alternative energy source.*
- *Encourage automobile manufacturers to improve auto technology to increase the fuel efficiency of new cars, buses, and trucks.*

Multimodal Element

Transportation planning has relied heavily in the past upon the analysis of separate and discrete transportation modes. However, as we try 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 our 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:

- Fresno is the major population center for the Valley.
- Fresno County contains Sequoia National Park and two national forests.

- Route 41 north out of the Fresno-Clovis Metropolitan Area (FCMA) is the primary corridor to Yosemite, one of the two most visited national parks in the nation.
- As the largest producer of farm commodities in the world, Fresno 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 inter-regional routes.
- The county is crossed by two north-south corridors, Freeway 99 and Interstate 5. Each of them is key to the statewide network.
- Recreational trips are served by several state highways: Routes 33, 41, 168, 180, 99, and 5.
- Fresno is served by Amtrak which has experienced increasing ridership, even though continuous rail service to Sacramento 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.
- Fresno-Yosemite International Airport provides a hub airport service to its service area of six counties.
- The climate and terrain are compatible with bicycle use for short commutes and recreational trips.
- 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 the Central Valley, where cities have experienced 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:

- 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 (the Tower District in Fresno, Clovis' Old Town, and many of the County's small cities serve as examples built more than 40 years ago).
- 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.

Accomplishments

Although transportation systems planning encourages us to look at the many ways in which trips can be made, only a select group of our trips as Californians are truly multimodal in the sense that we use more than one mode for a particular journey. These could include "park and ride" commuting trips where a private automobile or bicycle is driven to a vanpool site, or taking a car, bus or shuttle to the airport or train. Transportation corridors where right-of-way can be preserved and developed to accommodate more than one form of travel are also being evaluated. Most commonly, efforts are directed to improve existing facilities, maintain those options, and work to create the potential to make connections between systems in a manner that allows and facilitates a change to more environmentally favorable patterns of travel.

Figure 2-5 shows the intermodal network, illustrating mode options which frequently exist over the same corridor, as with transit and the regional roads, or in the State Route 99 corridor, which has adjacent rail lines. In the period since the adoption of the last RTP, progress has been made on further implementation of the planned regional transportation system, due largely to the resources provided from Measure "C", a local sales tax, and its reauthorization.

Through the use of this local funding source, which has been extended for a twenty-year period, and federal and state participation, Caltrans continues to work on the completion of a metropolitan freeway system which will include Freeways 41, 168, and 180. Major improvements have been made to overcrossings and interchanges. Maintenance and improvements to the rural street system, connecting Fresno County to adjacent counties, have also come about through Measure "C" and its reauthorization.

The transit system continues to work to improve service to its existing ridership and to expand that ridership in spite of constrained funding. Ridership and marketing surveys show that there is a high level of satisfaction among Fresno Area Express (FAX) riders in all areas except for those related to waiting time and overcrowding. Changing attitudes about the environment, traffic congestion and population growth seem to be creating a marketplace of consumers who are more aware and more accepting of mass transit benefits.

Fresno Yosemite International Airport (FYI) has been expanded and improved and a new baggage facility has been constructed. The main runway has been reconstructed, and the general aviation runway lengthened to 7,200 feet to allow the shifting of operations when needed. Terminal roadways have been reconfigured and the size of the parking lot has been doubled.

A new concourse building has been completed, featuring a second level hold room facility with four new aircraft gate positions equipped with passenger loading bridges, as well as airline and airport operations space at ground level. The new building also includes locations for two future loading bridges, allowing for a total of six second-level hold rooms/gates. The Airport has completed a FAR "Part 150" Airport Noise Compatibility program, and continues to purchase adjacent residential properties as funding allows.

Fresno Chandler Downtown Airport (now called Fresno Chandler Executive Airport), the City of Fresno owned general aviation facility, has constructed new T-hangers, maintenance facilities, runway improvements, an Automated Weather Observing System (AWOS), and a satellite-link weather reporting interface with the National Airspace Data Interchange Network (NADINE). In 2003, Chandler completed the largest airfield construction project in its history, the recently completed $3.9 million reconstruction of the main runway and ramp areas. Runway 30L/12R has recently been extended to 3,626 feet. Both FYI and Fresno Chandler Downtown Airport are served by transit. Access is currently available from local streets and Freeways 168 and 180. Completion of the planned extensions to Freeway 180 west and east will expand and improve access to the two airports.

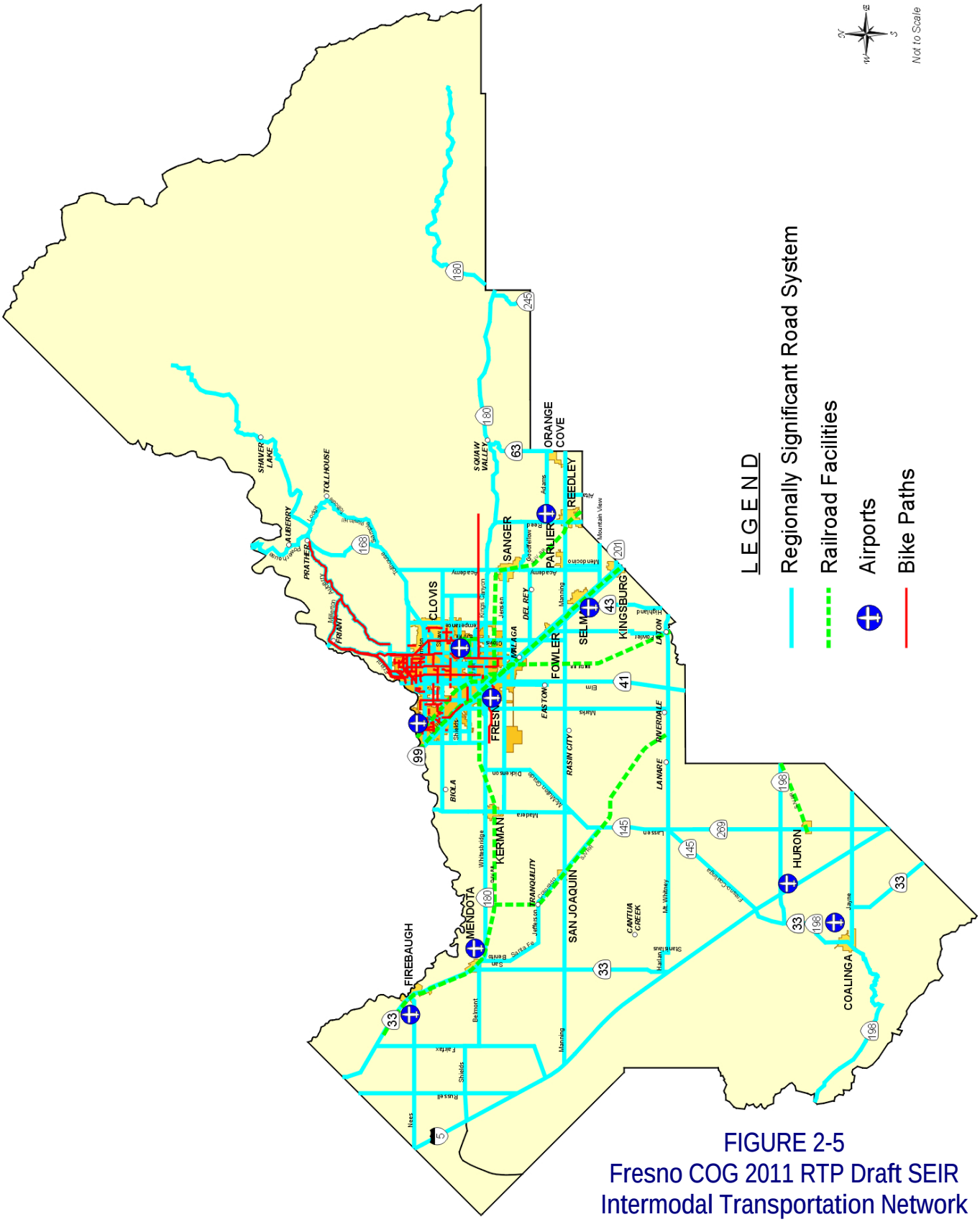


FIGURE 2-5
Fresno COG 2011 RTP Draft SEIR
Intermodal Transportation Network

Daily Amtrak service provides seven (7) round-trip trains, and can be expected to increase further if passenger train service is provided to Los Angeles. The historic Santa Fe Depot has been rehabilitated and functions as the new passenger rail station. Freight rail service is provided by the Burlington Northern Santa Fe and Union Pacific Railroads, both Class 1 railroads, and the San Joaquin Valley Railroad, a short-line railroad. Retention of abandoned rail corridors for bikeways and future light rail options is under consideration by member agencies. FAX transit lines and an off-ramp from Freeway 41 offer easy connections to the Amtrak station in downtown Fresno.

Needs Assessment

Corridor Preservation

- A concerted effort between the local jurisdictions, the regional transportation planning agency, Caltrans, and the public is needed to ensure the dedication of right-of-way to facilitate the planned ultimate corridors of State Highways, including interchanges, as well as major local arterial and collector streets. A region-wide approach is necessary for corridor preservation of transportation facilities, which cross jurisdictional boundaries.

- Clovis "Inner and Outer Beltways" are shown on the adopted Clovis General Plan, as a method of planning for the circulation needs of growth. As proposed, the outer beltway would approximate an alignment following and connecting Academy and Copper Avenues; the inner beltway would follow and connect McCall and Shepherd Avenues.
- Metropolitan agencies have encouraged the reservation of abandoned rail lines for either non-motorized trail or bikeway systems, or for retaining the options for eventual conversion to public transit or light rail systems.
- Eastside and Westside cities with an agricultural base need to maintain rail service options for the movement of crops to market.
- The State continues to plan for high-speed rail in California. Given population projections and air quality constraints, this RTP supports the corridor alignment that provides service to major population centers within the Central Valley.

Ultimately, transit service must be extended to new growth areas, if we are to offer travel options for those residents and workers. Funding limitations continue to focus transit routes to those corridors in highest demand, for cost-efficiency.

Goods Movement

Shipment of raw materials and finished goods is a central feature of any economy. While the majority of freight is carried by the trucking industry, commodity movement can occur by road, rail, air and pipeline. Throughout the state, freight movement over State Highways has grown faster than capacity; Fresno County is no exception to this trend.

In its role as a federally designated Metropolitan Planning Organization (MPO), Fresno COG is charged with shaping public policy to facilitate the movement of both people and goods in Fresno County. In order to accomplish that objective, COG staff has established a Quad-County Freight Advisory Committee. This committee consists of Regional Transportation Planning Agency (RTPA) staff from Madera, Kings, Tulare, and Fresno Counties working in collaboration with both the users (trucking industry, rail carriers, shippers, receivers, etc.) of the transportation system and the providers of that system (Caltrans, local agencies). The primary purpose of the Freight Advisory Committee is to identify problems and build consensus among public and private sector freight interests for improving the safety and efficiency of freight movement in the region. The Freight Advisory Committee meeting schedule varies. The importance of this Committee is expected to increase over the coming years as the ability to move an ever-growing amount of freight becomes more challenging and as state and federal governments devote more attention and funding to the issue. Some of the primary objectives to be accomplished with the Freight Advisory Committee include:

- Advise the COG and other public agencies about specific freight concerns, issues and priorities.
- Allow the Freight Advisory Committee to participate in COG's transportation planning and investment decision processes.
- Help identify, support and implement promising and effective strategies to improve freight mobility in the region.

The high volume of truck traffic within the Central Valley raises issues of highway maintenance, capacity, and safety, and has led Valley RTPAs to share a goal of finding ways to encourage a shift of some larger market share of commodity movement to rail. While the truck volumes on County roads and regional streets will still be a major factor to be addressed, highway systems would be relieved. This would allow the use of existing capacity on that system, freeing up comparable capacity on State highways and lowering maintenance costs for the highway system. A map highlighting high truck volumes can be found in Chapter 4 of the RTP.

As discussed in Chapter 1 of the RTP, the eight RTPAs in the San Joaquin Valley in conjunction with Caltrans and the San Joaquin Valley Air Pollution Control District have undertaken a series of studies to improve the understanding of truck transportation of commodities within and through the Valley. The third phase culminated with the development of a truck model, intended to forecast truck trips and vehicle miles traveled, analyze air quality and emissions from heavy-duty trucks, analyze impacts of congestion on major truck routes, and highlight safety and road maintenance issues associated with truck activity. The third phase of the study also provided improvements to the San Joaquin Valley truck model and integration with local models. This model will provide an analytical basis for evaluating the benefits of transportation investments that impact the movement of goods in the San Joaquin Valley.

In addition, in 2007, the San Joaquin Valley RTPAs developed the *San Joaquin Valley Goods Movement Action Plan, 2007*. The document is a coordinated strategic plan for system-wide, multi-modal goods movement planning in the San Joaquin Valley. The plan defines the linkages between the goods movement system in the Valley and the role it plays in the movement of goods throughout the rest of the State and Nation. The plan also identifies the crucial role the Valley plays in the State's and Nation's economy with its $20 billion dollar annual, agricultural economy.

In addition to the San Joaquin Valley Goods Movement Study, Fresno COG served as the project manager for a Caltrans-funded study focusing on the potential for a short-haul rail intermodal service that would connect the San Joaquin Valley with the Port of Oakland. The study, known as the California Interregional Intermodal Service (CIRIS), analyzed the potential for developing alternatives that would reduce the amount of truck traffic in the region by diverting some of the goods between the Valley and the Port of Oakland from the current truck operations to rail.

Recreational Travel

Fresno County contains many recreational destinations of regional significance, and includes routes to others in adjacent counties. Trips are made both by county residents and by travelers throughout the State for vacations and recreation to the following sites:

- Yosemite National Park
- Kings Canyon National Park
- Sequoia National Park
- John Muir Wilderness Area
- Millerton Lake Recreation Area
- San Joaquin River
- Kings River
- Shaver Lake
- Huntington Lake and the Kaiser Wilderness Area

- Pine Flat Reservoir
- Mendota Wildlife Area

The metropolitan area also contains the Fresno Convention Center, and is the destination point from outlying communities for theater, musical events, the Fresno County Fair, sports and other special interest events, and regional shopping. California State University, Fresno is a major attractor for football, baseball, basketball, track, and cultural events. The University itself currently serves approximately 20,000 students and employs approximately 950 faculty and 980 support staff. The State Center Community College has campuses in Fresno and Reedley, and has recently opened a third campus in Madera County north of the Fresno County border near State Route 99. The City of Fresno maintains two regional parks: Roeding and Woodward. Fresno County maintains Kearney Park and Lost Lake Park, which is situated along the San Joaquin River.

Transportation is one of the major issues facing many of the national parks today. This is particularly evident in Yosemite National Park, which has had as many as 4 million visitors in one year. The Yosemite Area Regional Transportation System (YARTS) is a regional joint powers authority formed among the counties of Mariposa, Merced, and Mono to implement transit service for visitors and employees into Yosemite National park from gateway communities. YARTS entered into a Cooperative Agreement with the National Park Service for the purposes of coordinating the new transit service with in-Park shuttle transportation, cooperative transit planning, transit service visitor and employee education, and funding support. YARTS began providing transit service throughout the Yosemite Region on May 19, 2000 on a demonstration basis and has since been converted to a permanent transit service.

YARTS is comprised of an Authority Advisory Committee and a Board of Commissioners, comprised of a member of the Board of Supervisors of each of the three YARTS counties. YARTS contracts with the Merced County Association of Governments for staffing to administer and manage the transit service.

The mission of YARTS, to provide a positive alternative method of access to Yosemite National Park, is of particular interest to the Fresno COG. Fresno County's proximity to Yosemite, the location of FYI here and the fact that State Route 41 is the busiest Park entrance during the peak season, all contribute to our interest in YARTS. In fact, the YARTS project includes elements that are directly related to our mission as a metropolitan planning organization. Consequently, the Fresno COG has retained a consultant to assist with a National Parks Transit Study that will focus on operational and infrastructure issues related to the provision of public transit service between Fresno and Yosemite and Sequoia/Kings Canyon National Parks. That study is expected to be completed in fiscal year 2010-11.

Highways, Streets, and Roads

Fresno County has an extensive planned system of streets and highways. The system is intended to provide an adequate level of traffic service within Fresno County in an effort to satisfy the transportation needs of the system users. The transportation system also plays an important role in the region's economy as it provides mobility for both people and goods within the region. As the number one agricultural county in the world, Fresno's economy is dependent upon efficient movement of agricultural goods from farm to market. In most cases, the first leg of the farm to market route is via the street and road network. In addition, while recognizing federal transportation legislation's shift to a more balanced multi-modal approach to transportation planning, the reality is that the majority of people and goods trips within Fresno County are made by trucks and the automobile and thus on the streets and highways network. Therefore while recognizing and embracing the multi-modal approach, it is important that a focus on the improved efficiency of the streets and highways network be maintained.

The purpose of this section is to identify the existing system and note streets and highways of regional significance and to describe the future streets and highways network noting both short-term improvements and the envisioned long-

range system. In addition, this section will identify the various planning efforts taking place with regards to the regional transportation network. Within this process, policies, needs and major issues related to the highways, streets and roads network in Fresno County are addressed.

While the needs assessments and the planned highway improvements to meet those needs are presented in this document, a major remaining issue to be addressed is the financing required to implement the needed improvements. The people of Fresno County made a commitment in 2006 to the future transportation system by choosing to continue a sales tax over a 20 year period (Measure "C") aimed at providing funding for improvements to the regional and local transportation network. Unfortunately, this anticipated revenue still is not sufficient to finance the requisite long-range transportation improvement needs of Fresno County. A comprehensive discussion of the various alternative strategies for financing the regional transportation network is examined in the Financial Element of this Plan.

Existing System Inventory

Regionally Significant Road System

The COG in conjunction with its member agencies and Caltrans has developed a "Regionally Significant Road System" for transportation modeling purposes which is based on the Federal Highways Administration (FHWA) Functional Classification System of Streets and Highways plus additional facilities of regional significance. Figures 2-6 and 2-7 show the Regionally Significant Road System for the Fresno County region.

Functional classification is the process by which streets and highways are grouped into classes, or systems, according to the character of service they are intended to provide. Basic to this process is the recognition that individual roads and streets 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 nature of this channelization process by defining the part that any particular road or street should play in serving the flow of trips through a highway network.

In general, the regionally significant system was selected to maintain and improve access between cities, accommodate a high level-of-service access to and within the Fresno-Clovis Metropolitan Area, and to link regionally significant commercial, educational, industrial and recreational facilities. The criteria used to establish the regionally significant system included factors such as functional classification, service to regional facilities, connection of regional facilities, and amount of current and projected use. Environmental Protection Agency (EPA) regulatory guidance is very clear that all facilities shown on the regionally significant system require specific discussion and analysis as it relates to air quality conformity.

The Regionally Significant System in Fresno County functions to serve the travel needs of all county residents and not just the needs of urbanized areas. The rural highway system accommodates not only the movements of people but is a particularly vital aspect of the movement of goods. As one of the prime agricultural counties in the nation, the intra-county road linkage of goods to processing plants and inter-county linkage of finished goods to other regions is essential.

The COG, Caltrans and various local entities have made major efforts to understand the strengths and weaknesses of the streets and highways system throughout Fresno County. The County has a formally adopted Road Improvement Program (RIP), 2003-2007, which they utilize for transportation planning and implementation. Methodologies and strategies to expand, enhance or maximize the existing system given current financial constraints have been examined. This process has required coordinated planning activities and careful programming of road projects between the COG, its member agencies and Caltrans.

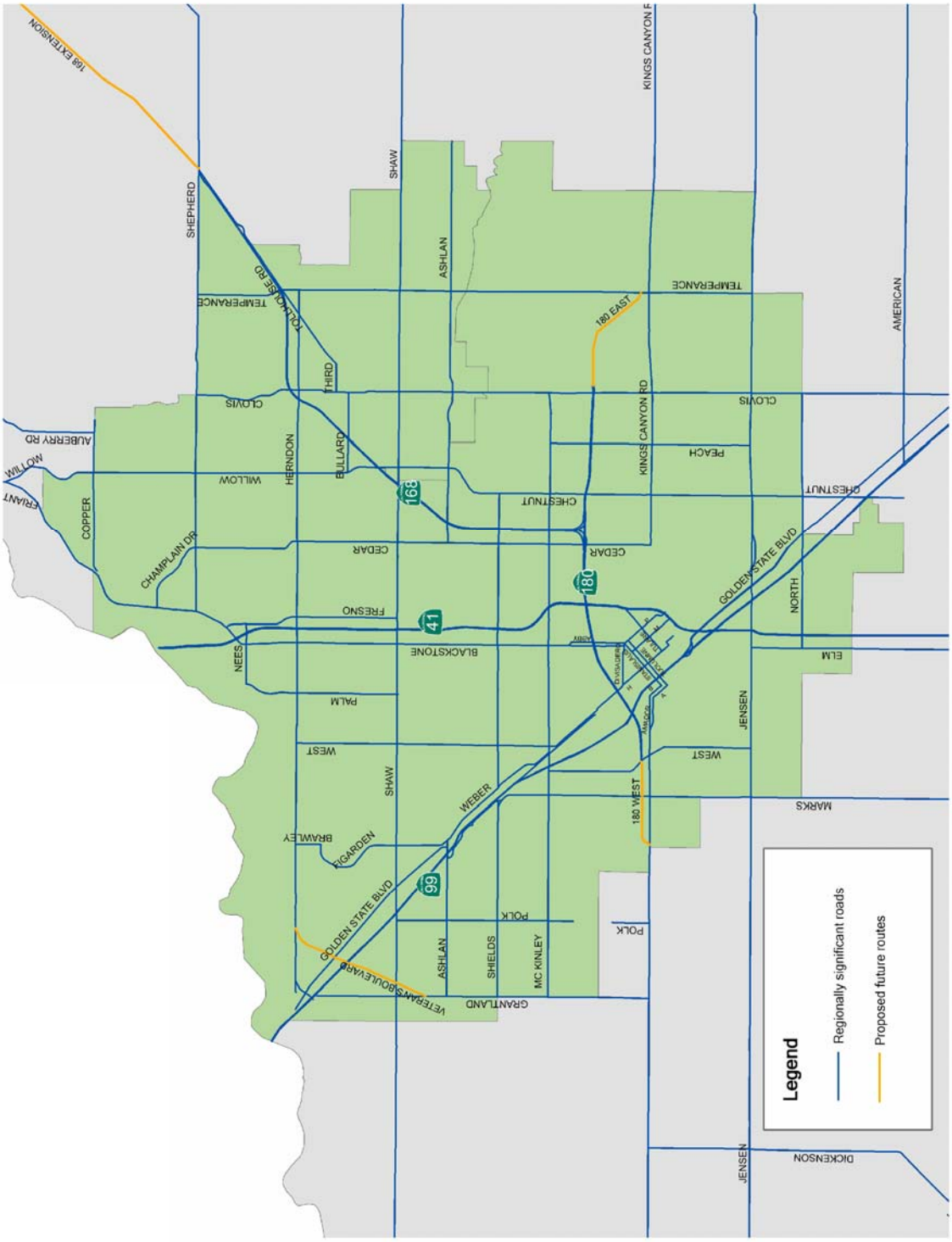


FIGURE 2-6
Fresno COG 2011 RTP Draft SEIR
Regionally Significant Road System
Metro Area

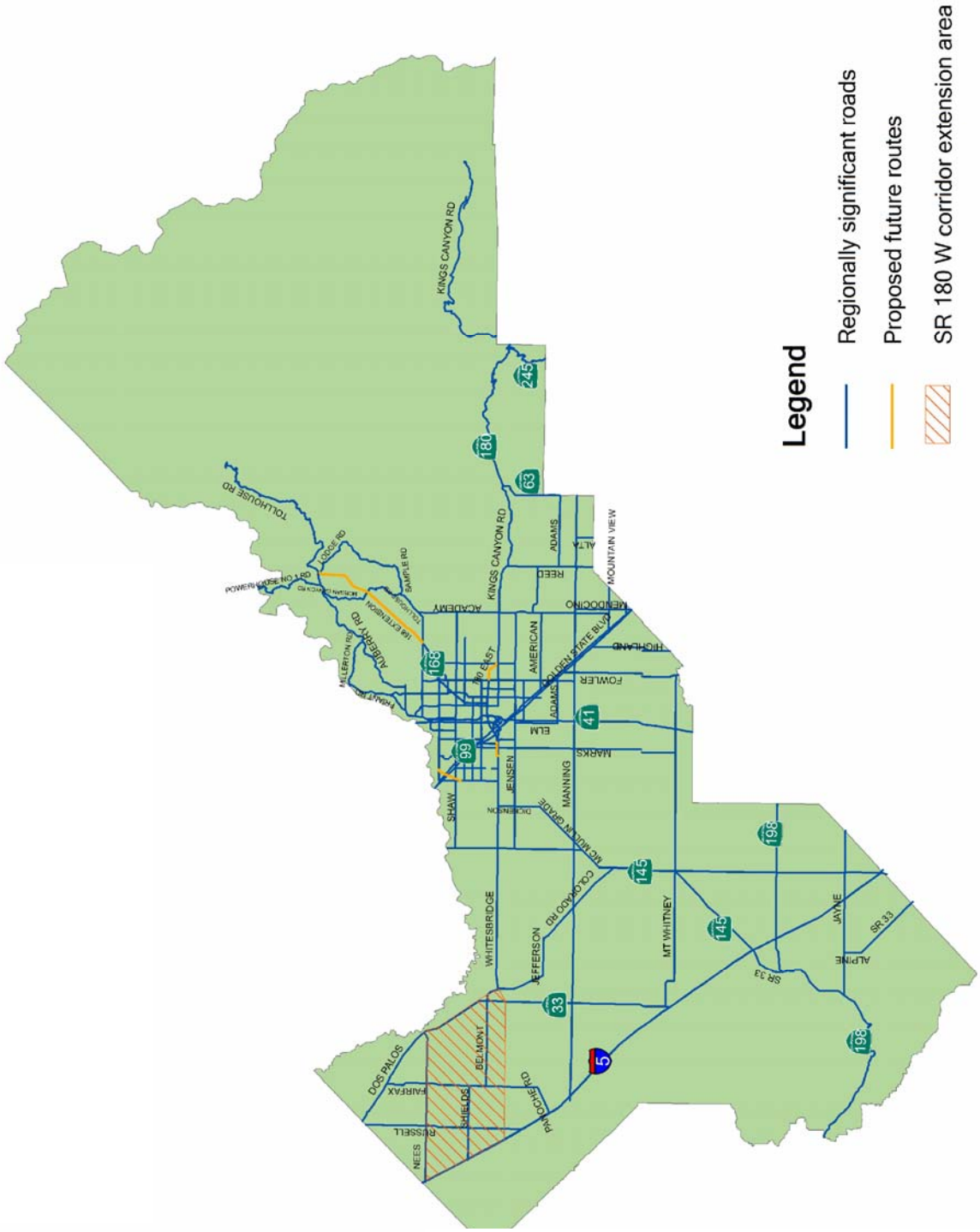


FIGURE 2-7
Fresno COG 2011 RTP Draft SEIR
Regionally Significant Road System
Rural Area

Needs Assessment

Upon examination there are a number of issues and needs related to the streets and highways network which require the attention of the COG. Among these issues are financing for maintenance, rehabilitation, reconstruction and construction, modification of travel demand, capacity problems, general plan circulation element inconsistencies and transportation corridor needs. The following text will analyze each of these issues/needs in further detail.

Financing of the Regional Transportation Network

Development of financing mechanisms to implement the planned transportation network remains a primary concern not only in Fresno County but throughout the entire State of California.

Transportation funding in California experienced a significant shift in recent years. Increasing operational and maintenance costs increased much more rapidly than the relatively flat growth of gas tax revenues. Due to increased auto fuel economy a reduction in revenue per mile traveled materialized. The combination of higher construction costs, higher design standards, environmental mitigation, and increased repair and rehabilitation requirements on aging freeways basically reduced state transportation investments to essentially a maintenance program.

To address this concern in 2006, voters of Fresno County reauthorized a ½ cent local sales tax, Measure "C," for transportation purposes. The 20 year tax is projected to generate $1.7 billion to be expended through the Fresno County Transportation Authority. Fresno COG and the Authority are currently in the process of developing a Strategic Implementation Plan to facilitate expenditure of those funds.

Transportation Corridor Needs

Pursuant to federal direction, all new regional transportation projects are required to take a "Multimodal Transportation System Corridor" planning approach. In keeping with this federal direction, the COG is working in partnership with Caltrans, local jurisdictions and the private sector to identify transportation corridors and projects which will provide maximum utilization of a multimodal system for the citizens of Fresno County.

- Fresno-Madera East-West Corridor Study

  In the urban area, east-west travel demand in the northern Fresno-Clovis Metropolitan Area is perceived as a major transportation planning concern. In order to address the future east-west travel demand needs of northeast Fresno County and southeast Madera County, the COG, the Madera County Transportation Commission (MCTC), and Caltrans District 6 participated in a regional transportation corridor study known as the Fresno-Madera County East-West Corridor / Sub- Area Study. Using funding primarily from a State Planning and Research Grant, a consultant (Valley Research and Planning Associates) was hired to conduct the study under the guidance of a Project Development Team consisting of planning and public works officials from each of the five affected jurisdictions (the counties of Fresno and Madera, as well as the cities of Fresno, Clovis, and Madera). The basic intent of Phase One of the study was to identify logical long-range transportation infrastructure needs within the project study area.

  Phase One of the study focused on examining Fresno and Madera Counties' long-range transportation needs within the study area by considering various future land use plans together with circulation element policies and engineering and environmental constraints. Phase Two focused on the preliminary engineering analysis and detailed environmental analysis associated with potential river crossings between the State Route 41 San Joaquin River Bridge and approximately one mile north of the Alternative #3 corridor. For mapping information concerning this corridor, please see the 2011 RTP

- Southeast Corridor Study

In addition to the Fresno-Madera County East-West Corridor / Sub-Area Study, a corridor route alignment study known as the Southeast Corridor Study was completed in 1996. The study's purpose was to analyze various modal alternatives, route alignments, and environmental issues facing development of a north-south regional route through the southeastern portion of Fresno County (see Exhibit 4-10 in the 2011 RTP). Consultant work on the project has been completed with the project currently under construction through the Measure "C" program.

- Herndon Avenue Specific Study

In its role as the Regional Transportation Planning Agency for Fresno County, Fresno COG served as the lead planning agency for the Herndon Avenue Specific Study (See Exhibit 4-11of the 2011 RTP). The $100,000 study, which began in December of 1999, was conducted by TJKM & Associates, a traffic-engineering firm from Pleasanton, CA. The overall direction for the study was provided by a Project Development Team consisting of planning and public works staff from affected local agencies and Caltrans. The basic purpose of the Herndon Avenue Specific Study was to analyze future travel demand in the northern Fresno-Clovis metropolitan area (including State Routes 99, 41, and 168) and determine the appropriate type of transportation improvements beyond those already planned that would be needed on Herndon Avenue in order to accommodate projected population growth and the resultant vehicle trips.

- Highway 99 Beautification Master Plan

In 1998 concerned policy makers and citizens began meeting regarding the appearance of Highway 99, which is one of the region's main north-south routes and one of the main connections to other areas of the state such as the San Francisco Bay area, the Sacramento area, and southern California. The feeling among the policy makers and citizens was that Highway 99's appearance, both inside and outside of the State right-of-way, was poor. They felt that this stifled economic development in the area and gave Fresno County a poor image.

Their efforts resulted in an MOU between Caltrans, the County of Fresno, and the cities of Fresno, Fowler, Selma, and Kingsburg creating the Association for the Beautification of Highway 99. The Association consists of eleven members: one from Caltrans, one elected official from each city and the county, and one private sector representative from each city and the county. In 2007 the Fresno Chamber of Commerce was added as a member of the committee.

After its formation, the Association requested that COG provide staff support to the group and that they fund a beautification plan for the corridor. COG agreed. After a thorough review and selection process, RRM Design Group was selected to assist in the preparation of the plan. Completed in July of 2000, the plan addresses the visual resource management, landscape development, highway maintenance, public service operations issues, and inter-governmental relations that will be required in the effort to beautify the Highway 99 corridor through Fresno County. It also offers a program that will preserve and enhance the natural scenic beauty of the corridor while recognizing and incorporating the commercial activities adjacent to the corridor necessary for the social and economic well being of the related communities. In addition, this plan strives to identify and enhance the unique regional character of the Highway 99 corridor through Fresno County and how it influences, and is influenced by, elements and activities beyond the immediate planning area.

The *Highway 99 Beautification Master Plan* was adopted by the COG in July of 2000 and by October of 2000 it had also been adopted by all five land use agencies along the corridor. At the request of the Association, the COG has now taken the lead in the implementation of the plan. The Association continues to meet bimonthly

and work with the COG on making the plan and its vision become a reality. The plan has already begun to have a positive effect on the corridor. Below is a brief summary of some of the early results of the plan:

- Almost $1.5 million dollars has been awarded in regional Transportation Enhancement Activities (TEA) grants for landscaping of the corridor
- Fresno County has constructed a "Welcome to Fresno County" monument signs on the north end of the county. A southern monument for Fresno County is in the development phase, which includes identifying a funding strategy and potential location sites
- The Association has formed a subcommittee to develop a zoning overlay ordinance to be adopted in the five land use jurisdictions. This document will address landscaping, sight lines, billboards, and land use
- Due in large part to the *Beautification Master Plan* and the work of the Association and COG, Caltrans selected Highway 99 through Fresno for the pilot project for its new Beautification and Modernization program, which represents a $6 million investment in the corridor

In addition to the corridor needs identified above, there are also several planning efforts underway to determine what type of long range transportation improvements are going to be necessary in order to provide adequate levels of service and overall mobility within Fresno County. The transportation corridors being analyzed are as follows:

- Fresno-Madera County Freeway Deficiency Study

  In 2003, COG was awarded a $240,000 Caltrans Partnership Planning grant to undertake a Freeway Interchange Deficiency Study in Fresno and Madera counties. The primary purpose of the project was to analyze planned land uses and transportation projects within the counties and determine which interchanges will be deficient by the year 2025. Phase II of the study is currently underway with a continued focus on the deficient interchanges as well as an assessment of financing options.
- State Route 180 Western Extension Corridor Study

  Caltrans and COG are also conducting a route adoption study for the extension of State Route 180 West from SR 33 to the I-5 corridor. The study will be looking at the appropriate future route alignment which would best serve the mobility needs of western Fresno County, as well as providing a "direct" state highway route for travelers and goods movement from I-5 to the City of Fresno.
- State Route 99 Widening

  As mentioned earlier, SR 99 throughout the Central Valley will be facing increasing congestion as the population of the state continues to grow. Congestion along SR 99 within Fresno County is of particular concern. To address this concern, Caltrans in partnership with various transportation stakeholders is looking at strategies to provide more capacity along SR 99 within Fresno County. Currently only a portion of the SR 99 corridor within Fresno County is six lanes, while the remainder is only four lanes. It is anticipated that in order to address future congestion, all of SR 99 through Fresno County would need to be 6 lanes.

Travel Demand

Modifying travel demand is a critical issue. It is becoming increasingly apparent that financial, energy, and environmental resources are slowly being overburdened by the need to satisfy ever increasing demand for travel. Over

time it will be necessary to develop and implement a variety of measures to reduce this demand. The measures range from the provision of various incentives to promote multi-occupancy vehicle use (i.e. rideshare and transit), alternative modes such as non-motorized and rail, and trip reduction through various land use planning mechanisms.

Managing travel demand is expected to play an increasingly important role in future transportation planning and related energy and air quality planning activities. Given the seriousness of this region's air quality problems, lack of implementation of traffic demand strategies will likely lead to the implementation of more stringent measures to reduce future vehicle travel.

Fresno COG will continue to monitor the regional transportation network with regards to the possible use of HOV lanes and the resultant impacts as they relate to air quality, congestion management and overall mobility. The HOV analysis and additional travel demand strategies will continually be analyzed as more system improvements are constructed and their impact evaluated as a whole.

Proposed Actions

Future Planning Activities

The Council of Fresno County Governments will continue to work with its member agencies, Caltrans, and the federal government in the development of a comprehensive multi-modal regional transportation network designed to provide maximum mobility for both the movement of people and goods throughout Fresno County. To the greatest extent possible, the COG intends for its state highway planning process to complement that of Caltrans. Thorough consultation is anticipated to resolve any of the scoping inconsistencies currently noted between the two agency's plans.

In the short-term, the COG will continue to work with its member agencies to address general plan circulation element inconsistencies. The assumption is these inconsistencies can be resolved, and that computerized modeling runs will be one of the tools used to aid in the decision-making process. In addition to the inconsistencies, the TP+ model will be used to evaluate alternative land use and circulation system assumptions, reflecting the Circulation Elements of Fresno County and the Fresno-Clovis Metropolitan Area. Modeling of the "existing" and "full build" freeway development scenarios will allow analysis of the full range of traffic assignments to networks and related impacts against which other network alternatives can be compared.

Updated traffic monitoring counts on selected corridors will also serve as key input to future metropolitan and rural streets and highways analysis. The COG publishes an annual Fresno Regional Area Traffic Monitoring Program. Also, the COG has the responsibility for annually coordinating the collection of sample system performance data within Fresno County. This data collection responsibility was assigned by the Federal Highways Administration who initiated a Highway Performance Monitoring System process designed to provide them with a means to assess and monitor the performance of federally-funded highway systems. COG will also remain involved in what is commonly known as Transportation Systems Management techniques. These are traditional strategies which are designed to ease congestion and improve the flow of traffic.

- Short-Term Improvement Program (2010 - 2015)

The various jurisdictions within Fresno County have completed numerous projects over the last several years, while highest priority has been given to maintenance of the existing street and road system. Special emphasis has also been given to the optimization of the existing system through traffic signal improvements and operational improvements.
The following are the top priorities in the region for the short-term (2010-2015):

1. Maintenance and rehabilitation of the existing state highway and local streets and roads network.
2. Complete construction on segments of the long planned freeway network.

3. Provide necessary further operational improvements.
4. Promote the implementation of transportation systems management actions where possible. Improvements on the local street network will focus primarily on safety, maintenance and rehabilitation projects.
5. Continued implementation of Transportation Control Measures such as improved public transit, traffic flow improvements, additional bicycle facilities, park and ride lots and voluntary ridesharing.

- Long-Term Transportation Improvement Program (2016 through 2035)

  Given the population projections for the Fresno-Clovis Metropolitan Area in conjunction with those of the other incorporated cities and incorporated areas of Fresno County it is anticipated that in the year 2035 approximately 1,519,325 people will inhabit Fresno County. This tremendous influx of people will place a tremendous strain on the transportation network in terms of movement of people and goods. The top priorities for the long-term in Fresno County will continue to be the maintenance and rehabilitation of the existing network, construction of the planned freeway network, provision of necessary operational improvements, and continued promotion of the implementation of transportation systems management improvements.

Urban Mass Transportation

Mass transportation is an economical mode of moving large numbers of people to designated places by bus or train. Mass transportation in Fresno County consists of both public transit and Amtrak rail passenger service.

Public transportation may be operated by either the public, private or non-profit sector of the economy. Service may be provided in either a conventional manner, such as, fixed-route, scheduled service, or as a "demand-responsive" service. Public transportation may take the form of shared-ride taxis, car and van pools, subscription bus services, and specialized accessible service for disabled persons. Although basic public transportation service within both the metropolitan and rural areas of Fresno County have been implemented, as those services exist today, public transit is little more than a safety net for transit dependent riders. In most cases, poor service frequency, short service hours, and multiple transfers create long travel times making public transit a distant last choice for travel.

Past funding constraints have made efforts to maintain reliable and accessible transit service commensurate with reasonable needs difficult. However, the recent reauthorization of Measure “C”, Fresno County’s ½ cent sales tax for transportation purposes, has established a stable funding source for Fresno Area Express (FAX). However, actual revenues have been significantly lower than expected. By 2009, Measure “C” was expected to provide an estimated $11 million dollars per year. It is anticipated that in fiscal year 2011 Measure “C” will account for less than $7 million dollars in revenue. It is the goal of FAX to improve the level of public transit within the Fresno-Clovis Metropolitan Area. FAX will utilize the 2006 Measure “C” Extension Expenditure Plan, as well as Customer Satisfaction Surveys and route analysis to determine future service levels. Attention will continue to focus on the needs of transportation disadvantaged populations including low income, elderly and disabled persons; however, effort must also be directed towards other mass transportation challenges including improving air quality, reducing congestion, and expanding service for an ever-increasing population. If public transportation is to play an effective role in addressing these issues, a greater emphasis must be placed on providing attractive alternatives to the ubiquitous private automobile.

Legislative mandates including the Americans with Disabilities Act (ADA) of 1990, the Federal Clean Air Act Amendments (CAAA) of 1990, the California Clean Air Act and the California Air Resource Board’s (CARB) Transit Fleet Rule have had a profound impact on public transit. The ADA brought about many changes for transit operators including requirements to provide accessible buses, trains and facilities for the disabled. The ADA mandated the provision of comparable paratransit service by fixed-route operators, and assurances that transit facilities will be constructed using accessible features.

The 1990 Federal Clean Air Act Amendments significantly strengthened the linkage between transportation and air quality regulations. The Act requires substantial emission reductions from the transportation sector and establishes conformity requirements to ensure that reductions are achieved. From a transportation perspective, the California Clean Air Act requires air pollution control districts to adopt and implement regulations to reduce emissions from indirect and area-wide sources and to encourage ridesharing, vanpooling, flexible work hours and increased multi-passenger trips through mass transit or other measures to reduce vehicle usage.

The CARB Transit Fleet Rule requires transit buses to meet stringent emissions standards that outpace other heavy-duty vehicle fleets. Transit bus emissions have been reduced nearly 90% since the end of 2007. In most cases, these rules have forced transit fleet operators to switch from diesel to alternative fuels such as Compressed Natural Gas.

As a result of these legislative mandates, both the public and social service transportation systems have modified fleet replacement programs to include clean fuel and alternative fuel vehicles. The cleaner vehicles are more expensive to purchase, and more expensive to maintain. Operators have also made significant service changes in order to comply with legislated requirements, including service designed to meet the mandates of the ADA. The ADA has required significant capital and operating outlays in order to meet compliance for accessible transportation services.

The Personal Responsibility Work Opportunity Resource Act of 1996 and California's CalWorks Program have brought to focus the need for public transportation to provide an important and necessary link to job training and development. Transit operators continue to work with the Fresno County Department of Employment and Temporary Assistance to assess transit services for CalWorks recipients.

Social service transportation in Fresno County is being guided in a direction consistent with the Social Service Transportation Improvement Act of 1979 (AB 120). The primary goal of the legislation is to improve transportation service provided by social service agencies through coordination and consolidation of their transportation services. The COG designated three Consolidated Transportation Service Agencies (CTSAs) within Fresno County. They include: the Clovis CTSA, The Fresno Metropolitan CTSA, and the Fresno County Rural CTSA. The CTSAs are responsible for promoting, among social service agencies, the consolidation of their existing services in order to achieve cost savings. Notwithstanding the social service agency consolidation efforts, the CTSAs are also to coordinate their services, to the maximum extent possible, with existing public and private transportation providers.

The purpose of the Regional Transportation Plan's Mass Transportation section is to review the existing and planned transit services and determines those improvements that will provide the greatest benefit while maintaining a high level of system efficiency. This section will focus on the following topics:

- Existing System
- Needs Assessment
- Unfunded Needs
- Accomplishments
- Proposed Actions

Where appropriate, the discussion will distinguish between the services of Fresno-Clovis Metropolitan Area Public Transportation, the Fresno County Rural Area Public Transportation, and Social Service Transportation.

Existing System

Fresno-Clovis Metropolitan Area

The major provider of urban public transportation in Fresno County is Fresno Area Express (FAX), a department of the City of Fresno. FAX provides two types of public transportation service in the FCMA: the fixed-route service for general public riders, and Handy Ride, a demand-responsive service designed for individuals who, because of an impairment or disability, are unable to use the regular fixed-route bus service. The fixed-route network follows a modified grid pattern with intersecting north-south and east-west bus lines.

The Handy Ride demand-responsive system provides complementary paratransit service as required by the Americans with Disabilities Act (ADA) of 1990 to paratransit certified disabled persons.

The City of Clovis also provides public transportation in the FCMA. Clovis operates two types of service: Clovis Stageline, a general public fixed-route service, and Round-Up, a demand-responsive paratransit service. Stageline operates on three routes, each on 30-minute headways. The routes are scheduled to coordinate with FAX service whenever feasible, in order to facilitate transfers between Stageline routes and FAX routes.

Clovis Round-Up provides demand-responsive transportation service for the elderly and disabled persons within the city's existing sphere of influence. The City of Clovis and the County of Fresno also contribute funds to FAX through formal contracts to provide fixed-route and paratransit services to and within Clovis and to unincorporated County areas with the FAX service area. Clovis provides fixed-route services weekdays and demand-responsive service Monday through Friday in Clovis and Fresno and seven days a week within Clovis using wheelchair lift-equipped vehicles. The City of Clovis designated its Round-Up services as a 100 percent CTSA function. Measure "C" local funding dollars are used to augment fare revenue to provide the necessary funds to match Transportation Development Act Article 4.5 dollars. Fresno Handy Ride and Clovis Round-Up have agreed to refer riders to each other if either system is unable to accommodate a trip request, providing space is available on to the other system.

Service areas for FAX and Clovis are shown on Figure 2-8.

Inter-city Ground Transportation

- Amtrak

  Amtrak, with financial support from Caltrans, operates seven (7) round-trip trains daily, linking Fresno with Hanford, Corcoran, and Bakersfield to the south and Madera, Merced, Riverbank, Stockton, Antioch, Martinez, Richmond, Berkeley and Emeryville to the north. One of the five trains continues on to Sacramento.

  Amtrak augments the *San Joaquin* trains with an extensive system of Thruway Buses that offer guaranteed connections at train side. At Bakersfield, a total of eight buses fan out to cover 40 destinations all over Southern California and Nevada, including Las Vegas, Palm Springs, San Diego, Orange County, Los Angeles, Ventura and Santa Barbara. At Stockton, Thruway Buses connect to 30 destinations, including South Lake Tahoe, Reno, Sacramento, Davis, Chico and Redding.

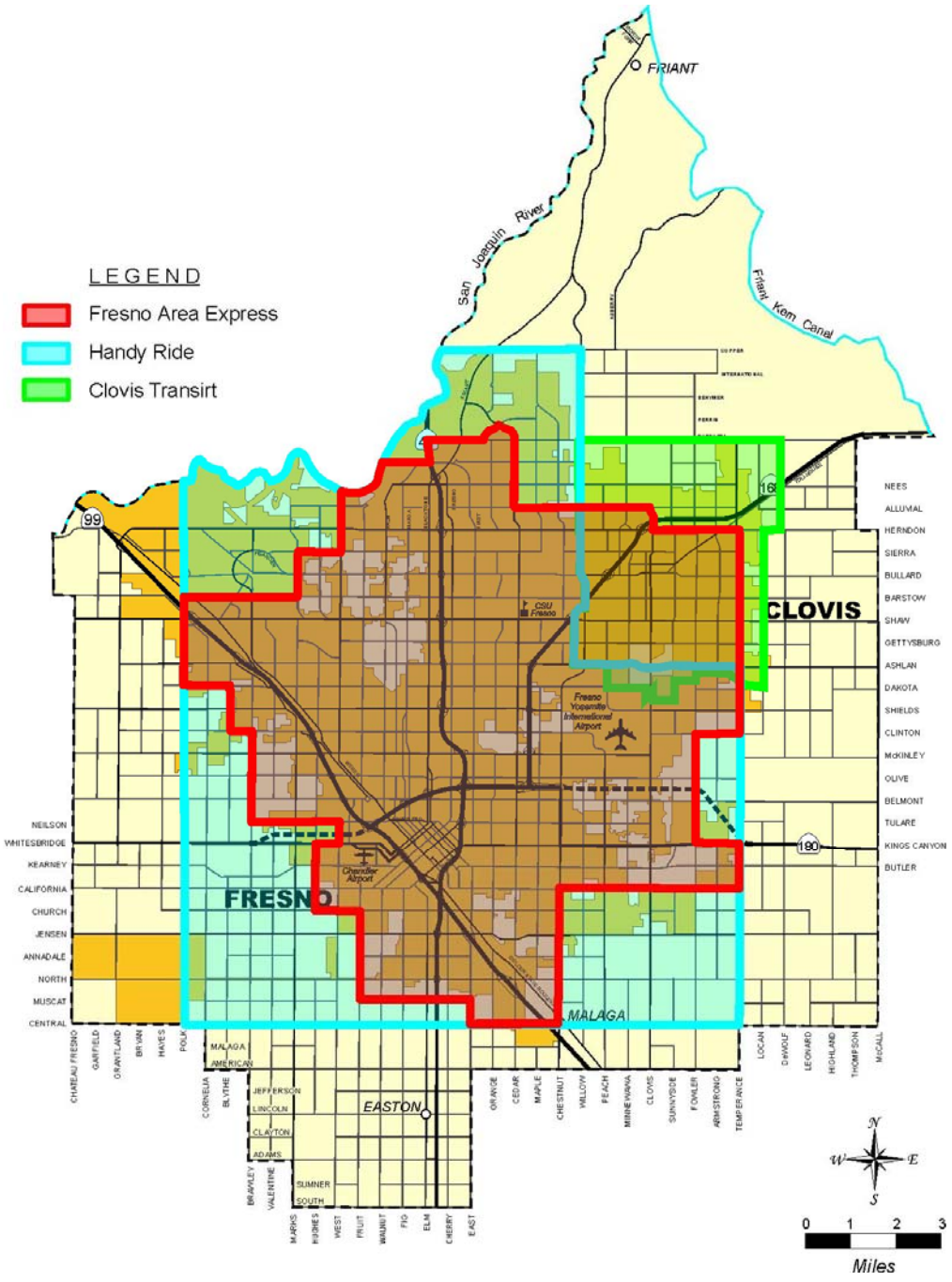


FIGURE 2-8
Fresno COG 2011 RTP Draft SEIR
Urban Transit Services

- Greyhound

  Greyhound provides frequent daily service from Fresno to a variety of points within California. Destinations served north of Fresno include Hayward, Sacramento, San Francisco, San Jose and Stockton. Destinations south of Fresno include Visalia, Bakersfield and Los Angeles. Connecting service is available to San Diego (via Los Angeles) and Yosemite National Park (via Merced).

- Transportes Intercalifornias

  Transportes Intercalifornias provides three daily round trips from Fresno to Los Angeles, with connecting services onward to Santa Ana, San Ysidro and Tijuana. There are also two daily trips to San Jose with service to the Westside of Fresno County, and two daily trips to Stockton with service to the northern Central Valley.

Orange Belt Stage Lines

Orange Belt Stage Lines provides daily service linking Fresno with Visalia, Paso Robles and San Luis Obispo. Orange Belt also connects several cities within the county, stopping at both Amtrak and Greyhound Stations in order to provide access to extensive travel networks. Inter-city and countywide transportation services are shown on Figure 2-9.

Accomplishments

Fresno Area Express

During the past decade, limited funding has constrained service improvements by FAX. As such, FAX has had to balance the demand to provide service into new and unserved areas with the demand to provide reliable service within the existing system. During the 10-year period from 1999 to 2009, actual revenue service miles increased from 3.3 million to 4.7 million, a 42.9% increase. During that same period, total ridership rose from 11 million in 1999, to 18 million in 2009, an increase in ridership of 63.8 percent. The increase in service miles is primarily driven by the addition of 15-minute frequencies on four routes in 2005/2006.

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Efforts to coordinate services among transit systems for maximum delivery of service throughout Fresno County continue, including coordination and/or consolidation of transportation services for social service agencies. A Regional Transit Agency Formation study was completed in 2007. The Study which included peer evaluations, policy level stake holder interviews, an evaluation of existing system performance and coordination efforts, found that Fresno County public transportation operators already have a high level of cooperation and coordination. Additionally, based on peer evaluations, Fresno County Operators are providing a cost effective and productive service. The Study recommends the formation of a 'Transit Coordinating Council' which would consist of policy level members and technical staff support. The purpose of the Council would be to continue to explore improved coordination potentially leading to a regional transit agency.

FIGURE 2-9
Fresno COG 2011 RTP Draft SEIR
Interregional Transit Servicing
Fresno County

Needs Assessment

Unmet Transit Needs Process

Each year the COG holds "Unmet Transit Needs" hearings consistent with Section 99401.5 of the Transportation Development Act. The Act governs the administration of the Local Transportation Fund (LTF). The referenced section of the Act clarifies that the Regional Transportation Planning Agency (Fresno COG in the Fresno County Region) must make a finding, after a public hearing, that there are no unmet public transportation needs within a jurisdiction which can be reasonably met before it may approve LTF claims for streets and roads.

The COG Policy Board adopted the following definition of Unmet Transit Needs in 1984:

> *"Those public transportation or specialized transportation services that are identified in the Regional Transportation Plan and that have not been implemented or funded."*

The adopted definition also sets forth the criteria by which "reasonable to meet" is determined. Since the RTP is the guiding document for the provision of transit services, any service implementation should be consistent with the RTP. In fact, the Transportation Development Act requires that prior to claim approval, an RTP consistency finding must be made. This definition does not prohibit new proposals, but simply requires that, prior to implementation, the proposal be incorporated within the current RTP, if necessary, by amendment.

Prior to making a finding, an annual assessment and analysis of the existing and proposed transportation system is prepared. This report is the foundation for the public hearing process each year.

The Social Services Transportation Advisory Council (SSTAC) was established by the COG in 1988 to comply with 1987 legislation (SB 498). Primarily composed of persons representing the elderly, disabled, and persons of limited means, the SSTAC's purpose is to:

- Annually participate in identification of transit needs.
- Review and recommend appropriate action by COG for a jurisdiction which finds that a) there are no unmet transit needs, b) there are no unmet transit needs that are reasonable to meet, or c) there are unmet transit needs that are reasonable to meet.
- Advise COG on any other major transit issues, including the coordination and consolidation of specialized transportation services.

The SSTAC was thoroughly educated as to the first step in its participatory role. With this solid foundation, it has now become an integral part of the COG transit planning process. Emphasis is placed on the responsibility for recommending findings pursuant to the unmet transit needs process. Within Fresno County, there are currently no adopted findings of unmet transit needs that are reasonable to meet.

Public Transit-Human Services Transportation Coordination Planning

The Fresno COG, as the designated Metropolitan Planning Organization (MPO), is responsible for transportation planning in Fresno County. This includes development and adoption of planning policies and documents, review and coordination of transportation planning, and transportation policy direction. The COG is the lead agency for the development of a Coordinated Human-Services Transportation Plan (CHSTP) under the direction of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). A coordinated public-transit human-service transportation plan provides a strategy for meeting local needs. It prioritizes transportation

services for funding and implementation, with an emphasis on the transportation needs of individuals with disabilities, older-adults, and people with low incomes.

Proposed Actions

Short-Range Transit Plan

- Fresno Area Express

The most recent Short-Range Transit Plan (SRTP) for the Fresno-Clovis Metropolitan Area was adopted on June 30, 2009. The Plan represents a short-range evaluation of transit needs and proposes specific recommendations for implementing the long-range objectives of the RTP. The Plan guides the provision of transit services in the FCMA over a five-year period, and sets forth an action plan commensurate with reasonable needs and available funding. The SRTP and this RTP are being amended to reflect the findings and recommendations of the Long-Range Transit Master Plan that was competed February 2002.

In order to achieve the goal of maintaining financial stability, FAX must continuously seek improvements in service productivity and cost effectiveness. Since the majority of FAX's budget is spent to provide service on the street, it is critical that service be regularly monitored to ensure these resources are being utilized to the fullest extent possible. FAX has addressed system productivity by instituting an ongoing program of service evaluation to identify inefficient use of resources and respond with corrective measures.

The primary assessment of transit service is accomplished by measuring individual route performance using FAX's route evaluation process. When appropriate, corrective action is taken to modify route alignments, change the service schedule to ensure that resources are used in the most productive manner. There are many methods for evaluating the efficiency and effectiveness of public transportation service. Because each method has unique strengths and weaknesses, FAX employs several service evaluation methods. Among the methods used are: peer review analysis, system minimum/maximum standards assessment, and passenger surveys.

The State Transportation Development Act (TDA) regulations require FAX to maintain a minimum 20 percent farebox recovery ratio. The TDA also places restrictions on the use of State Transit Assistance (STA) Funds. Regulations require transit agencies to keep cost increases under the State Cost of Living Index (CPI). If cost increases exceed the State CPI, transit agencies are not allowed to use STA Funds for operating expenses. Finally, local and regional concerns are used to develop minimum productivity standards. For FAX, these standards are developed through a coordinated, comprehensive, continuous process carried out by the Council of Fresno County Governments (COFCG). The COFCG's Regional Transportation Plan (RTP) and Short-Range Transit Plan for the Fresno-Clovis Urbanized Area (SRTP), set guidelines for service evaluation. Additionally, each year the COFCG prepares the Annual Transit Productivity Analysis. This document assesses all public transit operators in Fresno County, and reviews the most recent Triennial Audit recommendations.

- Clovis Transit

Clovis Transit has also been affected by limited funding, which necessitated changes with an added emphasis on efficiency. Route changes will be implemented based upon demand, reducing transfers and elimination of unproductive routes or portions of routes. Increased emphasis will continue to be placed on peak-hour service.

Clovis Transit will continue to monitor existing services for productivity and internal efficiencies. Efforts to coordinate services among transit systems for maximum delivery of service throughout the region will also continue. Ongoing coordination and consolidation of all Clovis transportation service for social service agencies will continue to be the focus of Clovis' specialized services.

Long-Range Improvement Plan

Fresno, like other Central California cities, is expected to continue experiencing a high rate of growth and development over the next twenty years. This growth will bring both opportunities (new jobs, new housing and increased prosperity) and problems (increased traffic congestion, air pollution and general over-crowding).

The Fresno urban area is no stranger to some of these problems. Fresno has experienced explosive growth in the northern neighborhoods abutting Herndon Avenue, west of Highway 99 and in the south east. On one hand, this growth has been good because it has increased the stock of affordable housing and created thousands of jobs in construction and related industries. On the other hand, the increase in automobile traffic associated with this growth is having an effect on both traffic congestion (collector streets and arterials) and air pollution. It has also made it difficult for FAX to serve the areas that are substantially far from the City core. To make the transit system more effective and a feasible choice for non-dependent riders, the City needs to experience greater infill development.

Will things get worse? The population of the FCMA, according to the State Department of Finance, is expected to surpass 1 million within the next twenty years. According to the Fresno COG Travel Model, traffic congestion throughout the FCMA will reach a 'significant' level by 2020 and 'serious' level 2030.

Increased congestion impacts not just cars but buses as well. An increase in congestion increases the time it takes for a bus to make a round-trip, which, in turn, increases the number of buses, needed just to maintain the current level of service. In other words, it ends up costing more to keep doing the same thing. Even a small decrease in the average speed along a corridor can translate into the need of one or two extra buses on a route. This in turn can increase annual operating costs by several hundred thousand dollars. In the near future as much as 25% of a bus' total round-trip time could be spent waiting at red lights or creeping along in stop and go traffic.

Public transit operators and policy makers must give serious consideration to how competitive transit can or should be with private automobiles. If FAX, or any other transit operator, is expected to play an earnest role in economic development, environmental justice or improving air quality, then it will be necessary to offer a system which is competitive with the private automobile. If so, that system will look vastly different from the system on the street today. The question then becomes, is the community ready to commit the resources needed for transit to be a viable alternative to the ubiquitous automobile?

The FAX LRTP- identified four corridors that could potentially support high capacity transit. The corridors include Ventura/Kings Canyon, Shaw Avenue, Cedar Avenue and Blackstone Avenue. Data collected during the preparation of the FAX LRTP including residential and employment densities, current and planned land uses, and current FAX ridership travel demand analysis showed these corridors to be the most viable within the FCMA. The Bus Rapid Transit Master Plan, completed in 2008 confirmed these findings and on August 27, 2009, the Fresno City Council passed a resolution declaring a Locally Preferred Alternative (LPA) for a Bus Rapid Transit (BRT) project. The LPA adoption is a necessary step in applying for Federal Transit Administration (FTA) Very Small Starts Grant (VSS). The project limits include Ventura/Kings Canyon Road from Fowler Avenue on the east to Downtown Fresno, and Blackstone Boulevard from Friant Road on the north to Downtown Fresno. Bus Rapid Transit will bring an innovative, high-capacity, lower cost public transit solution that can achieve the many of the performance and benefits of more expensive rail modes.

In 2006, Fresno County Voters approved a half-cent sales tax called Measure C. Measure C included a projected $5 million reserve for the completion of the PTIS and the formation of a regional transit agency. The PTIS is to evaluate mobility needs and opportunities, and to identify strategies for public transit and transit supportive infrastructure development that will result in wider acceptance and use of non-automobile transportation modes such as public transit, bicycle and pedestrian travel. In addition to the development of viable alternative public transportation options for Fresno County, this study seeks to develop ridership projections and cost estimates for various growth and development scenarios that will be used to establish a long-range plan leading to optimum connectivity within the region.

The Public Transportation Infrastructure Study (PTIS) is exploring how people travel in Fresno County, so that by 2050 there will be more opportunities to travel by bus, by bike or by foot.

The PTIS will help Fresno County identify ways to:

- Reduce urban sprawl.
- Decrease traffic congestion.
- Reduce greenhouse gas emissions.
- Improve air quality.
- Preserve agricultural land.

Fresno County's population is projected to grow to 1.9 million people by 2050. This growth will increase traffic congestion on our roadways and highway system. In the past, Fresno County's major growth pattern has been low-density and widely spread geographically. This pattern has consumed prime agricultural land and increased the number of miles residents drive each year, a major contributor to greenhouse gas emissions. Currently, Fresno County does not meet several of the air quality standards in the Federal Clean Air Act or the California Clean Air Act and must satisfy federal requirements to bring the county into compliance.

Discussion

- Coordination of Fares and Schedules

  Management and staff from FAX, Clovis Transit, Fresno County Rural Transit Agency, and Fresno County Economic Opportunities Commission meet regularly to discuss ongoing planning projects and reports, service issues, and connectivity among systems. Coordination of fares and schedules is an ongoing topic at these meetings. FAX now includes Clovis Roundup schedules with the FAX Schedule Guide, and in October 2004, Clovis Roundup and FAX initiated the Metro Pass, a new regional pass that is accepted on both systems. Information for both systems is available by phone at 559-621-RIDE.

  In addition, a regional farebox system that will facilitate a regional pass program is being implemented this year. FAX is the lead agency in the procurement of a new Automated Fare Collection System that will accomplish many of the benefits of forming a regional transit agency without the necessity of forming a new regional political structure.

- Transit Interface

  Fresno COG continues to publish the *Fresno County Transportation Guide*. The Guide is a bilingual (English/Spanish), user friendly booklet which describes in detail the availability of mass transportation services throughout the county. The Guide includes information on regional, inter-city, and local transportation providers; information on transportation services to many popular destinations; and clear direction on how to plan trips and make connections within and between systems and modes. The document includes several colored maps. The Fresno COG continues to revise the document each time it is published.

- Public/Private Sector Coordination

  FAX continues to contract with the private sector for many services which can be provided more reliably and economically. The maintenance department contracts to private firms for a variety of services including major overhauls and vehicle painting. FAX also contracts with private firms for special studies, surveys, marketing projects, technical training and administrative equipment servicing. Planning and related services are now contracted with the Council of Fresno County Governments. Many administrative support services such as legal, personnel, communications, finance, data processing and purchasing are performed by other city departments. Municipal code and labor contracts preclude some outside service contracting.

- Inter-city Rail

  Amtrak currently provides inter-city passenger rail service for seven (7) round trips daily. Freight is carried along both the Burlington Northern Santa Fe and the Union Pacific railroads.

- Passenger Rail Project Priorities:

  Passenger rail priorities currently facing Fresno include:

  - Preservation of abandoned railroad right-of-way and trackage
  - The California High Speed Rail Project
  - Assessment of future light rail potential

A more detailed discussion of rail issues can be found in the 2011 RTP (Section 4.8) under the heading *Rail*.

<u>Stable Funding Source</u>

Measure "C" has provided local jurisdictions with additional local funds to be used for local transportation purposes. However, in the past those funds have not been dedicated to transit and are also balanced against the local street needs of the various jurisdictions. This is evidenced by the fact that FAX did not receive any Measure "C" funding in its operating budgets for fiscal years 1998, 2000, and 2001.

With the passage of the reauthorization of Measure "C" in November 2005, funds generated by the ½ cent sales tax will be dedicated for transportation and transit purposes. This funding is currently estimated to be $235 million dollars over the next 20 years.

Fresno County Rural Area Public Transportation & Social Service Transportation

Existing Systems

The Fresno County Rural Area is served by a combination of providers: common carrier; general public and social service agencies.

Rural Inter-City Ground Transportation

The rural transportation network utilizes the limited services provided by regional common carriers. They include Greyhound, Orange Belt Stage Lines, and Transportes Intercalifornias. Their services generally utilize portions of state highways and provide very limited services to a few of the County's incorporated cities. Their routes are shown on Figure 2-9.

Rural General Public Transportation

The primary provider of rural general public transportation is the Fresno County Rural Transit Agency (FCRTA). The Joint Powers Agency was formed in 1979 to address transit needs of the rural incorporated cities including: Coalinga; Firebaugh; Fowler; Huron; Kerman; Kingsburg; Mendota; Orange Cove; Parlier; Reedley; Sanger; San Joaquin; Selma; and Fresno County. The FCRTA provides fixed-route services which link communities with each other and with the Fresno-Clovis Metropolitan Area. Intra-community public transportation service (fixed route and/or demand-response) is provided through public, private or non-profit entities. The services specifically address the needs of elderly, disabled, and general public patrons. All vehicles continue to be accessible to frail elderly and disabled passengers in compliance with the Americans with Disabilities Act. Rural public transportation services are provided along four basic corridors to the FCMA as follows:

- Coalinga – Huron – Five Points – Lanare – Riverdale – Caruthers – Raisin City – Easton Corridor
- Firebaugh – Mendota – Kerman Corridor
- Kingsburg – Selma – Fowler Corridor
- Orange Cove – Reedley – Parlier – Sanger Corridor

An additional inter-city corridor also provides linkages between rural incorporated cities:

- Huron – Interchange Developments at State Highway I-5 and 198, Harris Ranch, West Hills College, Coalinga.

Figure 2-10 provides a summary of the FCRTA's services in the rural system.

Rural Social Service Transportation

The COG has co-designated the FCRTA and the Fresno County Economic Opportunities Commission (FCEOC) as the Rural Consolidated Transportation Service Agency. The Rural CTSA celebrated its 28th anniversary in 2010. FCEOC is the lead agency responsible for overall program administration including liaison with social service agencies, data collection, development and implementation of the Rural CTSA Operations Program and Budget (OPB), execution of service contracts, and related administrative tasks. FCRTA administers Transportation Development Act (TDA) Local Transportation Fund, provides technical assistance, and evaluates the performance of the FCEOC.

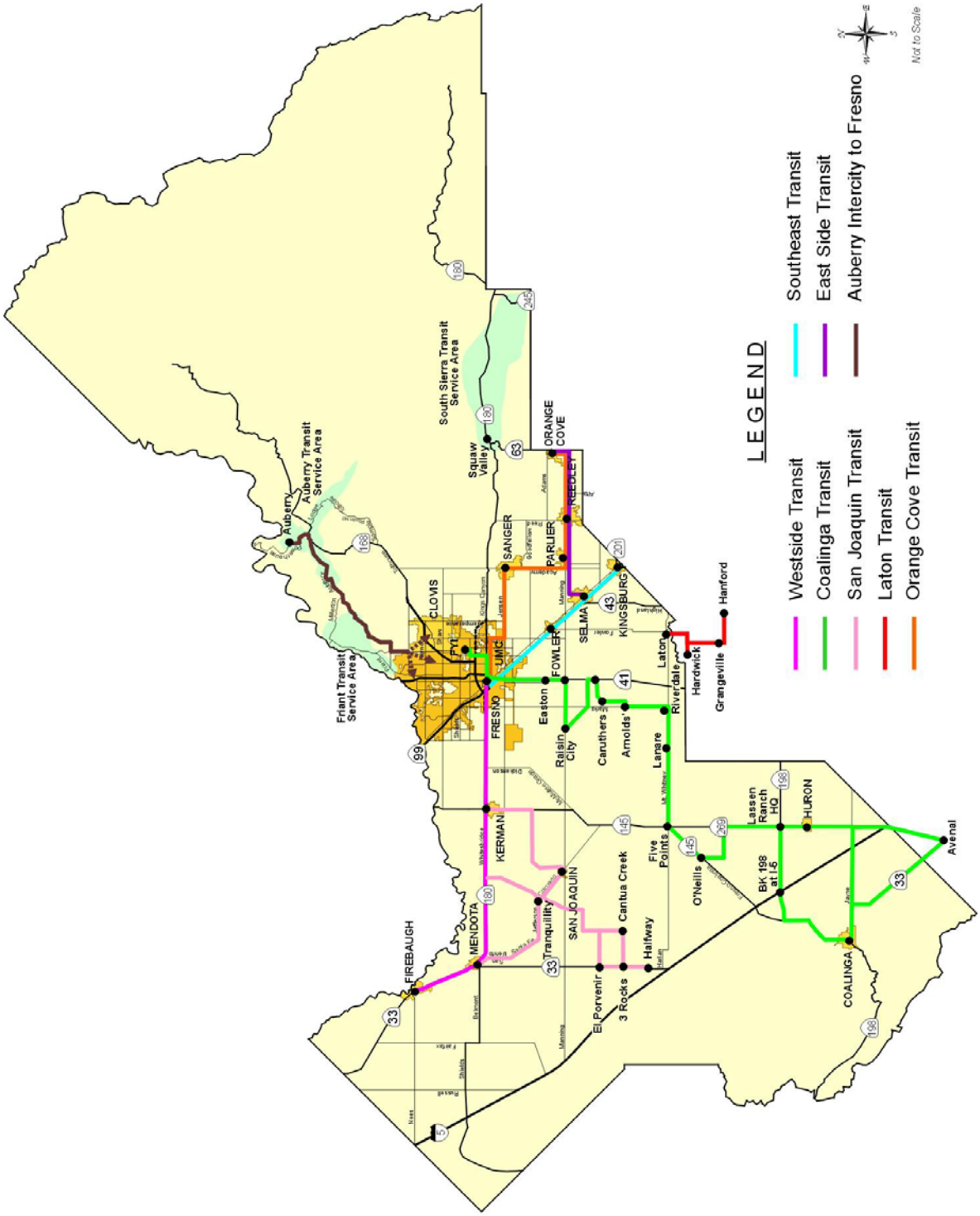


FIGURE 2-10
Fresno COG 2011 RTP Draft SEIR
Fresno County
Rural Transit Services

The Social Transportation Improvement Act of 1979 encourages the coordination and consolidation of social service transportation. It enables up to five percent of the County's LTF monies to be set aside to enhance social service transportation. The Rural CTSA receives a share of these funds on a population basis ratio basis between the Urban and Clovis CTSAs. The operating costs of CTSA services are funded with TDA / LTF Article 4.5 revenues, contract service revenues, and farebox revenues. TDA funding must be matched with contract revenues and farebox revenues on a forty-five percent, forty-five percent, ten percent (45% / 45% / 10%) basis.

The Rural CTSA process primarily involves four types of coordinated transportation services. These services are provided through: 1) Vehicle Timesharing; 2) Ridesharing; 3) Consolidation; and 4) Maintenance.

The Rural CTSA currently provides services to the following four social service agencies: 1) Central Valley Regional Center (CVRC); 2) Fresno County Economic Opportunities Commission; 3) Fresno County Office of Education; and 4) Special Trips.

The Rural CTSA also provides drivers for fifteen rural public transit subsystems under contract with the FCRTA.

Annually the Rural CTSA prepares a comprehensive *"Operations Program and Budget"* that reflects their specific work program for the coming fiscal year. The 2009-10 edition of the OPB was adopted by the respective agencies policy boards and the COG Policy Board in June 2000.

Fresno County Coordinated Human Services Transportation Plan

In August of 2005, Congress passed SAFETEA-LU (Safe, Accountable, Flexible, Efficient, Transportation Equity Act; A Legacy for Users). SAFETEA-LU is a federal surface transportation program which provides funding for transportation. Specific transit programs are part of the Surface Act. They include the following programs:

- Elderly and Persons with Disabilities Transportation - (Section 5310)
- Rural Public Transportation - (Section 5311)
- Job Access and Reverse Commute (JARC) - (Section 5316)
- New Freedom - (Section 5317)

As part of fulfilling the requirement to receive funding from any of these sources, Fresno County must complete a 'Coordinated Human Services Transportation Plan'. The plan accomplishes the following:

- Identifies resources currently in use for public transit.
- Surveys users to determine current needs and future expectation of users.
- Develops strategies to close gaps in perceived service levels.

The federal funds are the resources used to close the gaps identified in the plan. The Fresno County Coordinated Human Services Transportation Plan was developed in close cooperation with public transit and human services providers and other stakeholders.

Fresno COG and FAX staff completed the Fresno County Coordinated Human Services Transportation Plan in November 2007. Following an extended 45 day review period for public comments, the document was adopted by the Fresno COG Board on January 24, 2008 by Resolution 2008-03.

Accomplishments

During the previous few years FCRTA has made a number of modifications to its services and operations. Specific changes are documented in the "*Short-Range Transit Plan for the Rural Fresno County Area, 2007-2012".*

Needs Assessment

The assessment of needs in the rural area is a function of the COG's annual *"unmet transit needs"* process. The process itself was previously discussed in the Urban Section. Several surveys and demonstration programs have been conducted in recent years in response to particular rural unmet transit need requests:

- *Periodic ridership surveys* of each FCRTA subsystem continue to provide a profile of ridership characteristics and boarding and deboarding statistics and are conducted biennially.

- *Non-rider survey*: In response to a recommendation contained in a previous Triennial Performance Audit, COG and FCRTA staff has developed a survey form that was distributed randomly to 5,000 residents within FCRTA's Service Area.

  The bilingual (English and Spanish) multi-colored form was intended to introduce FCRTA's available services to those who may not be aware of their option to utilize public transit within rural cities and to the Fresno-Clovis Metropolitan Area. A tear-out map with phone numbers was provided for continued future reference purposes. As an incentive to utilize their services, a free round trip coupon was also provided that may have been utilized on any of the in-city services.

  Seven brief questions were asked to assist in determining how we might better serve potential new riders. The form separated for return mailing purposes. Postage was pre-paid to facilitate a convenient response.

  Staff tabulated the results. A summary report entitled *"Rural Public Transportation Service Marketing: Non-Transit User Survey for the Fresno County Rural Transit Agency"* was made available for review purposes. Observations and recommendations were offered for staff and Board consideration and acceptance. The results were included in the *"Short-Range Transit Plan for the Rural Fresno County Area"*.

- *Needs Assessment Surveys:* The FCRTA has conducted many needs assessment surveys. Several have resulted in the implementation of demonstration services. The services are carefully monitored to ensure anticipated ridership expectations are realized, and minimum performance characteristic measures are maintained.

- *Big Sandy Indian Rancheria:* FCRTA Staff prepared an Unmet Transit Needs Survey for distribution to 330 tribal members "on" and "off" the reservation. Twenty-eight (28) surveys were returned. Limited-infrequent needs were expressed. The introduction to the Survey Form explain the three (3) existing services that were available to all mountain area residents, including Auberry Transit Intra-Community and Inter-City service to Fresno. That same information continues to be advertised weekly in the "Mountain Press" newspaper with expressed reference to the Big Sandy Rancheria, the Cold Springs Rancheria, and the Table Mountain Rancheria in Friant. When staff completed its survey analysis and report with finding and recommendations for the tribal leaders, several formal presentation opportunities were scheduled and then cancelled. Later, staff was informed that the entire leadership had been changed and that the new leadership was no longer interested in efforts initiated by the previous group. Staff forwarded multiple copies of the report and supportive documents through Rancheria representatives and Caltrans liaison staff. No other communications have subsequently transpired.

The annual unmet needs process and transit system performance evaluations shall ensure continued modifications, improvements, and expansion of rural transit service during the next twenty-five year RTP planning period.

Proposed Actions

- Short-Range Improvement Plan

The 2009-2014 Rural Short Range Transit Plan (Rural SRTP) was adopted by the COG Policy Board in June, 2009. The following points outline the purposes of the Rural SRTP: 1) to provide a five-year, action-oriented program to implement the public transportation as defined in the RTP; 2) to provide a basis for local governments to demonstrate that public transportation needs within their jurisdictions have been reasonably met; 3) to serve as the planning basis for federal and state assistance to rural public transportation operations in Fresno County, and; 4) to provide a valuable source of information for citizens and local-elected officials.

Plans for the succeeding five years call for a continuation of public transportation services within and between incorporated cities, reflective of warranted service levels. Expansion may include increased service hours, and weekend services. Requests for expansion to new areas should attempt to be accommodated within existing available operations. Special attention must be exercised to ensure that existing transit services are not diluted or jeopardized as service expansion requests to new areas are received.

Those subsystems exhibiting the weakest performance will continue to be monitored for possible adjustments in service. The adjustments may take the form of service revisions, consolidation through new institutional arrangements or termination of service.

With the deregulation of common carrier service, some rural communities within Fresno County have lacked adequate inter-city bus service. The FCRTA acquired seven large capacity, alternatively fueled vehicles to address these obvious needs. Service improvements were introduced on the County's four primary inter-city routes in 1998 to ensure adequate service to meet public needs.

FCRTA will continue to seek improved operational and administrative efficiencies through coordination with the Rural Consolidated Transportation Services Agency.

The Fresno COG completed the first phase of a "Public Transportation Regional Formation Study". The evaluation study was completed by Nelson/Nygaard Consulting Associates in June 2007. The results reflected recommendations for Policy Board consideration. The three public transit operators have committed to a number of actions to enhance coordination between agencies towards seamless transit services for the general public. The agencies are currently purchasing new electronic farebox equipment that will include utilization of Smart Cards. The use of these Cards will facilitate travel transfers between transit systems and insure the necessary tracking of farebox receipts for accounting purposes. Clovis Transit piggy backed on recent vehicle procurement by the FCRTA. FCRTA was able to utilize the same vendor, as the Clovis Transit did in purchasing audio-video surveillance equipment to monitor on-board activities by a recorder or by emergency personnel that may wirelessly view on-board activities from a following vehicle. FCRTA is coordinating with FAX to purchase and install additional Bus Stop Shelters, benches, and waste receptacles. The FCRTA has received a Grant to purchase two vehicles that are expressly designed to accommodate the transporting of individuals and their mobility equipment, when they exceed the maximum six hundred and fifty pound limit under the Americans with Disabilities Act (ADA). The vehicles are intended to be available, as needed, by FAX, Clovis Transit, the FCRTA, and County-wide emergency service personnel. The three agencies personnel, assisted in interviewing RFPs, towards the purchase of Trip Planning Software; and Automated Passenger Counting equipment.

Following the successful passage of the local sales tax initiative, Measure C included funding for further study and implementation of a centralized transit entity.

The second phase is for a specific study, with options and alternatives, for management staff and Policy Board consideration. The contract was awarded to Nelson/Nygaard Consulting in March 2010. This study is to recommend Business Plans to facilitate further consideration for the implementation purposes. This action became even more important as each transit agency experiences deep funding cuts in traditional transit funding programs.

The Rural CTSA has a similar document that guides its responsibilities. The *CTSA's "Operations Program and Budget"* is similar to a *"SRTP"*. It identifies the responsibilities of the CTSA, the legislative intent of the program, and the systematic basis for addressing the relevant issues in the coming fiscal year. It reflects the negotiated services among participating social service agencies.

The Rural CTSA will seek to augment or contract its services with those rural transit subsystems catering primarily to social service clients and expand service in unserved rural areas where warranted.

COG will continue to monitor and consider elderly and disabled needs in the planning process. Annually, the *"unmet transit needs"* process evaluates the needs of all segments of the community. The CTSAs annually review the needs of their clients, and the elderly and disabled community plays an important role in that evaluation. Social service agencies must also recognize their responsibility under statute and continue to fund services for their clients.

- Long-Range Improvement Plan

The rural area's long-range improvement plans reflect the recommendations of the RTP. For the most part, the plan improvements are very conservative. When justified by need, and sustainable by performance criteria, additional vehicles and/or service hours will be added. Population growth and development of residential, commercial, and industrial uses in rural areas may also prompt additional services.

The final edition of the Measure C Expenditure Plan included a number of improvements relating specifically to rural transit to be addressed and implemented over the next twenty years. These provisions were specifically approved by the Fresno County voters in November 2006. Staff will address the specifics through the Short Range Transit Plan for the Rural Fresno County Area document and annual FCRTA Budgets.

Unfinanced Needs

Unfunded mandates continue to have a significant impact on the year to year operations of the FCRTA and the Rural CTSA. The most recent were: the Americans with Disabilities Act; alternative fuels under the Clean Air Act; and Drug and Alcohol Testing requirements of the U.S. Department of Transportation.

The most significant ongoing need is the timely replacement of fleet vehicles. Measure C will go a long ways to addressing this particular need over the next twenty years. Of course, additional support from State and Federal sources will also be required. Existing grant programs remain very competitive. Available State and Federal apportionments simply purchase fewer vehicles due to inflationary increases in equipment costs.

Aviation

The Aviation Element results from the planning efforts of the COG, its member agencies and other local entities. The Element ranges from a broad locational diagram of public use airports within the Fresno County region to the specific details of individual airport facility development. The locations of the public use airports are shown in Figure 2-11.

The broader Aviation System Plans provide the foundation for the precise location, facility design and detailed costs of specific facilities contained in the Master Plans of the individual airport facilities. The Master Plans address long-term planning goals, potential land use, noise and safety impacts, and the means by which to implement the System Plans.

An integral next step in the Master Plan process is delineation of airport impacts on the surrounding land area. The responsibility for coordination of land use planning among state, regional and local agencies in the area surrounding an airport facility lies with the Airport Land Use Commission. Through adoption of land use policy plans, the Commission delineates a compatible environment for the airport facility and, in turn, protects a valuable local investment. COG member agencies with jurisdiction over an airport also incorporate these policies into their Airport Master Plans and general planning efforts.

Regional airport system planning is required by both state and federal funding agencies in order to inventory facilities, evaluate needs (both on the airport and as a result of aircraft activity in the surrounding areas), and forecast demand, which will determine funding levels and apportionment. The Fresno County region's Aviation System Plan is integrated into the California Aviation System Plan and, ultimately, into the National Airport System Plan, which identifies the existing airport relationships on a state and national level and the service and facility needs over a twenty-year period.

Public airports in Fresno County are, for the most part, subsidized by the jurisdiction's general fund. However, the cost of capital improvements currently needed by the airports cannot be met by local funding sources alone. Both the Federal Airport Improvements Program (AIP) and the California Aid to Airports Program (CAAP) are also not adequately funding airports in Fresno County. The Regional Transportation Plan anticipates funding for airport projects within Fresno County will fall short over the next twenty-three years.

Existing System Inventory

The Fresno County Regional Aviation System Plan, a segment of the Central California Aviation System Plan, provides detailed information for all the public use airports in Fresno County. Refer to the 2011 RTP for a complete discussion of the Aviation System.

Accomplishments

Recent Planning Activities

The COG, as a member of the Caltrans California Aviation System Plan - RTPA Advisory Committee, continuously monitors the California Aviation System planning process. Information is disseminated as necessary to the airport operators within the region and data is gathered as updated information is required or new operations are affected.

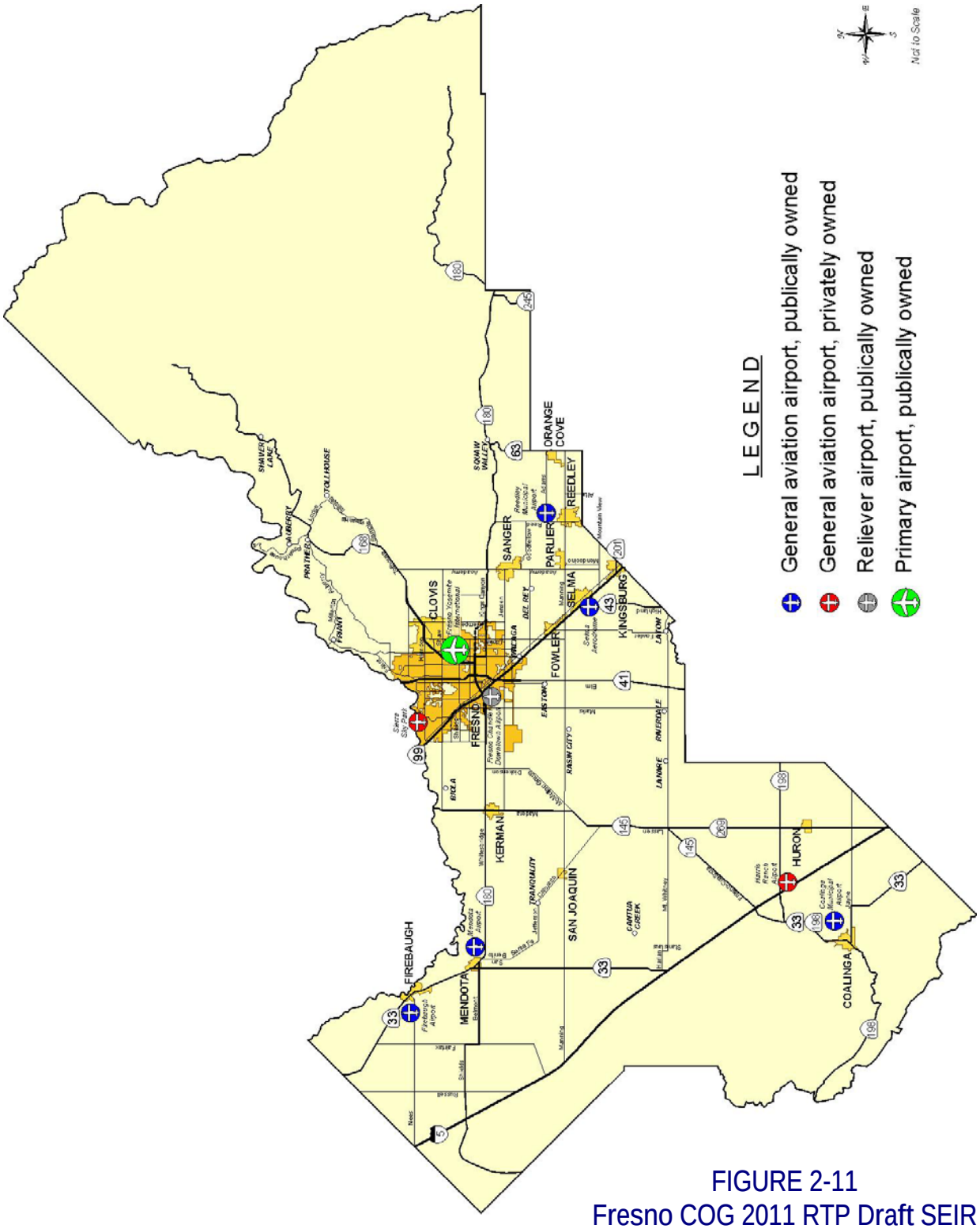


FIGURE 2-11
Fresno COG 2011 RTP Draft SEIR
Regional Airports

- Fresno County Regional Aviation System Plan

  On January 29, 1998, the COG Policy Board approved the Fresno County Regional Aviation System Plan, one of twelve county aviation system plans that together comprise the Central California Aviation System Plan (CCASP). The CCASP was developed over a four-year period and represents an attempt to shift aviation system planning in California from its traditional statewide, or "top-down" approach to a regional, or "bottom-up" approach. This new approach makes particular sense in a state like California where there exists wide diversity in regional economies and topography. The CCASP was added to other regional aviation system plans to form an overall California Aviation System Plan. The CCASP was funded by ongoing grants from the Federal Aviation Administration, with the State Department of Transportation's Division of Aeronautics in charge of overall project management.

- Fresno Chandler Executive Airport Master Plan

  In April 1999, the City of Fresno adopted a comprehensive update of the Fresno Chandler Executive Airport Master and Environs Specific Plan. The Master Plan document identifies opportunities for Chandler in concert with other developments occurring in the area (nearby business parks, downtown redevelopment, and planned freeway access), reinforces the role of Chandler as a reliever airport to Fresno Yosemite International Airport and as an executive airport suitable for business aircraft, and guides development of the airport over the next twenty years. The Fresno Chandler Executive Airport Master Plan was updated in late 2004. The airport was renamed Fresno Chandler Executive Airport in June 2004.

- Fresno Yosemite International Airport Master Plan

  The City of Fresno has completed most of the short-term projects identified in its earlier 1997 Airport Master Plan for Fresno Yosemite International Airport. Consequently, in 2002, the City initiated an Airport Master Plan Update for the Airport. The Plan will develop a twenty-year forecast for aviation development, including plans that allow the airport to be prepared to accept service from potential low cost carriers. It will determine the projected needs of all airport users for both airside and landside facilities. It will evaluate the future development of the passenger terminal area. It will evaluate alternatives for development of each airport function (airfield, terminal area, air cargo, access and parking, airport support area and general aviation). It will prepare updated information to supplement the Airport's General Plan and Environs Plan. The new Master Plan is pending adoption by the end of 2010.

- Reedley Airport Master Plan

  This City of Reedley has recently completed and adopted a Master Plan for its airport, including an Airport Layout Plan Update and environmental assessment.

- Coalinga Airport Master Plan

  The City of Coalinga has also completed and adopted an Airport Master Plan for the Coalinga Municipal Airport. The Plan will accommodate the type and extent of aviation facilities needed at the Airport through the year 2025.

- Airport Land Use Commission

  Beginning in October 2008, the Council of Fresno County Governments assumed responsibility from the County of Fresno for staffing the Airport Land Use Commission (ALUC). The ALUC reviews plan amendments, rezoning applications, zoning ordinance text amendments, airport master plans and building regulations when located in the review area of Fresno County airports. If the ALUC finds a proposal inconsistent with its plan, the city council

responsible for the airport in question may overrule the ALUC action by a four-fifths vote. However, specific findings pursuant to Section 21670 of the Public Utilities Code must first be made.

The ALUC has adopted a series of land use policy plans for the public use airports within the region. The responsible public agencies have also adopted the respective land use policy plan or have incorporated certain provisions of the policy plan into their General Plan documents and Airport Master Plans. The policy plans provide the basis for recommendations on land use development proposals within the airport environs. The ALUC adopted Land Use Policy Plans for Coalinga's new Municipal Airport facility on November 28, 1994, for the Harris Ranch Airport on October 16, 1995, and for Fresno-Chandler Downtown Airport on March 15, 1999. Additionally, the ALUC adopted new noise contours for Sierra Sky Park, on October 16, 1995. The ALUC recently adopted Land Use Policy Plans for Fresno Chandler Executive Airport, Reedley Municipal Airport, and Coalinga Municipal Airport.

Completed Improvements

In March 1993, the City of Fresno completed construction of an at-grade connection at Fresno Yosemite International Airport between the existing concourse building and the main passenger terminal building. Also completed in 1993 was the Phase I remodeling and reconfiguration of the main lobby and terminal building at a cost of $6.5 million. Phase II improvements included a remodeled concourse, completed in March 1998 at a cost of $4 million.

Installation of a Category II instrument landing system was completed in the summer of 2000. The CAT II system will make it easier for passenger and cargo aircraft to land in poor weather, such as fog.

In 1987, the taxiway was reconstructed and the general aviation runway was lengthened to 7,206 feet as a precursor to the reconstruction of the main runway, completed in the late 1980's. This also allows for aircraft operations to be shifted to one or the other runway during critical construction periods. A new automated, enclosed baggage facility was constructed in 1987, which replaced the outdoor facility. The Airport has also developed and is implementing an Airport Noise Compatibility program.

In 2001 and 2002 the terminal roadways were reconfigured, providing additional traffic lanes in front of the terminal building. This included the addition of separate lanes and curbside for public transportation (vans, shuttles, taxis), as well as curbside canopies along the front of the terminal and along the public transportation curb. The size of the parking lot has been doubled.

Also in 2002, a large addition to the concourse building was completed. This addition consists of a second level hold room facility with four new aircraft gate positions equipped with passenger loading bridges, as well as airline and airport operations space at ground level. The concourse addition includes stairs, escalators, and an elevator to convey passengers from the existing ground level concourse to the new second level facilities. The building addition also includes locations for two future loading bridges, allowing for a total of six second-level hold rooms/gates.

Several important projects were completed in fiscal year 2004-05. Approximately $2 million in discretionary funding from the FAA was the final component for the $10.1 million air cargo ramp. The ramp and access road improvements are designed to accommodate the needs of air freight companies and to capitalize on Fresno's mid-state location. The large staging area was built on the north side of the airfield to consolidate air cargo in that strategic location and provide room to expand, as cargo needs demand. Also, the FAA continues to award about $1.1 million annually for the ongoing Noise Attenuation Program at FYI, which will include purchase of land and insulation of buildings to reduce the impact of noise surrounding the airport. The FAA has also awarded $213,000 to fund a new Master Drainage Plan to complement planning efforts for air cargo and other increased uses on the airport in the future. Finally, $5.6 million in FAA discretionary funds were utilized to rehabilitate the 9,222-foot main runway.

More recent improvements include the construction of a new rental car facility; an expansion of the baggage claim area; a remodel of the terminal lobby, including consolidation of ticket counters, an expanded meet and greet area, and a "sense of place" art project; and, an expansion of the security checkup area.

Fresno Yosemite International Airport recently initiated international air service to Guadalajara Mexico. The construction of a Federal Inspection Station was completed as required prior to initiation of this service by Mexicana Airlines.

Fresno Chandler Executive Airport continues to make improvements as funds allow. New T-hangars and maintenance facilities have been constructed. An Automated Weather Observing System (AWOS) was constructed and is now fully operational. Two new GPS approaches now exist. An overlay project on Runway 12R/30L, the airport's primary runway, in the amount of $157,000 was completed in Fiscal Year 1999-00. The primary runway had last received an asphalt-concrete overlay in 1992. In 2003, Chandler completed the largest airfield construction project in its history, the recently completed $3.9 million reconstruction of the main runway and ramp areas. Runway 30L/12R was recently extended to 3,630 feet, Taxiway A was rehabilitated and, airfield drainage improvements and security improvements were made.

Federal Aviation Administration (FAA) funds were used to fund two projects at Fresno Chandler Executive Airport in fiscal year 2004-05. The City of Fresno utilized $166,700 to fund the first phase rehabilitation of Chandler's historic Terminal Building, believed to be the last continuously operating WPA terminal building in the nation. Approximately $150,000 per year for the subsequent two years was utilized to fund phases 2 and 3 of the rehabilitation project. Also completed was the closing of the shorter of the two parallel runways, thereby expanding the amount of developable land at the airport and providing for use of the closed runway as a ramp area along which aviation facilities and an aviation-related industrial park could be built.

The Fresno Chandler Executive Airport Master Plan Update and Environmental Assessment were completed in 2004. Also in 2004, the City of Fresno renamed the airport from Fresno Chandler Downtown Airport to Fresno Chandler Executive Airport.

Recent improvements at the Harris Ranch Airport include a major asphalt sealing project.

Recent improvements at the Mendota Airport include a major overlay runway project.

The City of Firebaugh received $301,000 in funding in Fiscal Year 1998-99 from the Caltrans Aeronautics Program for storm drain improvements and runway safety area. Also, Firebaugh Municipal Airport was selected in the 2000 Aeronautics Program to receive $41,000 in Fiscal Year 2000-01 to repair its runway edge.

Recent improvements at the Reedley airport include a 60-foot by 240-foot paved runway stopway and an 80-foot by 100-foot blast pad, a taxiway widening from 25 feet to 30 feet, and installation of an Automated Weather Observing System (AWOS).

Needs Assessment

A number of issues continue to impact aviation in California, including safety, noise, ground access, transportation system management, airport financing, institutional relationships, land use, air quality, air service and public awareness. To a greater or lesser degree these issues also impact the Fresno County aviation sub-system.

Of particular importance to Fresno County airports is the need for additional state and federal funding to maintain existing airport facilities and construct new facilities necessary to accommodate anticipated levels of growth in based aircraft and aircraft operations. While the general aviation airports located in the county are anticipated to have ample

capacity to accommodate future forecast levels of aircraft operations, this capacity could be significantly reduced if airport runways, taxiways, landing and navigation aids and other airport support facilities cannot be adequately maintained because of funding constraints. Likewise, the ability of airports to accommodate forecast levels of based aircraft is dependent upon the availability of funding to both maintain existing parking facilities and to construct additional parking as the need arises.

Another need identified by many of the general aviation airports in the county is funding for airport master plans. While Coalinga and Reedley have secured funding to develop Airport Master Plans, airports in Firebaugh and Mendota and the Selma Aerodrome have all identified the need to develop an airport master plan to guide future improvement and development. The City of Selma continues to explore acquisition of the Selma Aerodrome. The information contained in a master plan would assist the city to make a decision. Also, each of the cities, including Selma, believes its airport is important for economic development. Airport master plans would help delineate the physical relationship between airport development and adjacent industrial and business park development.

FYI's service area consists of six counties including Fresno, Kings, Madera, Mariposa, Merced and Tulare. State Department of Finance population figures indicate this six-county area had a total population on January 1, 2009 of 1,965,609 or 5.1 percent of the total California population of 38,292,687. It has become clear that passenger usage of FYI is underutilized due to market forces generated by air fares, the automobile and alternative airports in the Bay Area and Los Angeles. Surveys show that FYI is losing perhaps several hundred thousand passengers to Southern California and Bay Area airports and to passengers who drive to their final destination. Reduction of this market leakage through better airline service, including additional international service, is a primary challenge for FYI. Ongoing education is necessary to convince residents within the six-county service area of the advantages of selecting FYI rather than airports within larger metropolitan areas. These advantages include less use of expensive gasoline, reduced travel time, lower congestion, less vehicle wear and exposure, and better parking and security.

There is also an ongoing need to better quantify and promote the economic significance of FYI to Fresno and the entire San Joaquin Valley in order to better develop and sustain ongoing support. Caltrans Division of Aeronautics completed a Final Report in June 2003 that provided a comprehensive evaluation of the economic benefits of aviation and airports to California communities and the overall State economy. The report, prepared by Economics Research Associates, noted that aviation's overall contribution to the California economy (including direct, indirect and induced impacts) amounts to nearly 9 percent of both total state employment and of total state output.

Of increasing economic significance to FYI is the role and value of air cargo. In this regard, major airports in both Southern and Northern California may experience significant air cargo constraints that include both facilities and operations capacity, thereby presenting an opportunity for Fresno's FYI. Intermodal goods movement planning in the near future should, therefore, focus on increased air cargo/distribution service. Longer term, increased associated passenger demand for FYI may also result. These economic opportunities should be pursued.

Proposed Actions

Future Planning Activities

The airport land use policy plans for the general aviation public use airports in Fresno County provide for orderly growth surrounding each airport. Future ongoing land use planning efforts of local governments will seek to assure that land use actions are consistent with these recommended policies. Many of the airports in Fresno County have expressed an interest in updating their comprehensive land use plans (CLUP). The COG is committed to include aviation system planning as an integral part of its transportation planning program and to prepare special aviation studies or reports as needed. The COG is committed to update the Fresno County Regional Aviation System Plan at the appropriate time.

- Short-Range Improvement Plan

The short-range improvement plan calls for continued maintenance and ongoing improvements to the airport facilities and the protection of clear zones to comply with safety standards. Emphasis will continue to be placed on airport land use compatibility.

The City of Coalinga plans to build a 7,500 foot runway with a full Instrument Landing System (ILS). Planned short-range improvement projects include runway, taxiway and apron pavement maintenance, additional vehicle parking, and the extension of sewer and natural gas lines to the airport. The City's highest priority, to update the Airport Master Plan and Environmental Assessment, has been completed. Longer range improvements include a 4,000 foot long cross wind runway with parallel taxiway and lights, hangars for potential light industrial tenants, shades for existing tiedowns, a terminal building, and a fire station. The crossing runway is particularly important because of wind direction and velocity, and, therefore, safety considerations at the airport.

The City of Firebaugh's planned short-range improvement projects include a pavement maintenance program, install reflective markers and security fencing, a 150-foot runway extension, and reconstruct and repave the aircraft parking area. As with Coalinga and other airports in the County, development of an Airport Master Plan remains a high priority.

At Fresno Chandler Executive Airport, planned short-range improvement projects are to improve security, relocate the compass rose and lighted windsock, rehabilitate aircraft taxiways. Longer range improvement projects are to design and construct aircraft apron (phase 3) and airport access road improvements, design and construct north airfield drainage improvements, and design and construct runway 30L-12R extension to 4200 feet with grade separation (phases 1 and 2).

At FYI, numerous short-range improvement projects are planned. Some short-term improvement projects include airfield lighting and airfield signage, taxiway rehabilitation, security improvements, purchase ARFF Vehicle, and approach zone land acquisition. The design and reconstruction of runway 11R-29L is notable because of its cost of about $19 million.

City of Mendota planned short-range improvements include cap/seal the parking ramp and existing runway, widen the runway to 60 feet, cap/seal/extend taxiways, apron expansion, provide hangers, improve access roads, and extend the runway (including taxiway) 1,400 feet including runway lights. Development of an Airport Master Plan is also a high priority.

An Airport Master Plan/Updated Airport Layout Plan and Environmental Assessment for Reedley's airport have recently been completed. Planned short-range physical improvements include overlay the airport runway and taxiway, replace runway lighting and relocate taxiway lighting, install an Automatic Weather Observation System, widen the runway by ten feet on the west side and the parallel taxiway by five feet on the east side, widen the parallel taxiway to 50 feet; remove tree obstructions, and construct a hangar taxiway. There is also an immediate need at the Reedley Airport for additional hangar space and shelters.

The Selma Aerodrome's needed short-range improvements include improving and lengthening the runway from 2,400 feet to 3,600 feet to meet FAA standards, upgrading airport lighting, and reconstructing the taxiways. An Airport Master Plan is also needed.

Long-range plans will focus on continued orderly growth of airports within the region and on enhancing air passenger and freight service.

Financing

Existing Financial Sources

Aeronautic projects are funded from federal, state and local sources. The Regional Transportation Plan anticipates that funding for airport projects within Fresno County will fall short of the amount needed over the next twenty years. Detailed information concerning airport revenues for all Fresno County public use airports is contained in the Fresno County Regional Aviation System Plan, a component of the Central California Aviation System Plan, approved by the Council of Fresno County Governments Policy Board on January 29, 1998 and incorporated herein by reference. Also incorporated herein by reference are detailed listings of airport improvement projects for the next five years for FYI and Fresno Chandler Downtown Airport included in the Five-Year Capital Improvement Program for each airport.

In November 2006, Fresno County voters approved a twenty-year extension of Measure C, the one-half cent sales tax increase for transportation purposes. Included in the expenditure plan for the extension of Measure C is $17,000,000 (approximately one percent of the total amount estimated to be generated by the extension of Measure C), for use by Fresno Yosemite International Airport and Fresno Chandler Executive Airport. These funds will be available to match state and federal funding for improvements at the two airports. A list of these projects is provided in Appendix D, Table D-1 of the Expenditure Plan.

Non-Motorized Transportation

The Non-Motorized Transportation element of the RTP is focused on regional, metropolitan, and community bikeway networks and a network of multi-use trails that includes bicycling. Local planning efforts also include equestrian and hiking trail networks and pedestrian facilities. Pedestrian facilities are essentially site-specific and local, and hold particular importance in community design and redesign in working toward a more livable environment. Equestrian facilities are essentially recreational in nature. Neither pedestrian nor equestrian facilities are typically regional in function and, following the direction of the District 6 System Management Plan, this RTP will not consider them as viable alternative transportation modes at the regional level. Nevertheless, this RTP recognizes the value of equestrian and hiking trail systems for recreational purposes, as enhancements to the multimodal transportation system, and for their contribution to an improved quality of life in Fresno County and, therefore, supports their continued development.

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 that replaces an auto trip results in cleaner air. Bicycles do not consume limited fuel, maintenance is low, and bicycling can be used for commuting as well as for recreational purposes while providing physical exercise.

The bicycle's door-to-door capability for shorter trips makes it an attractive alternative mode of transportation in the Fresno 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 Fresno-Clovis Metropolitan Area and in many smaller cities within the county.

Goals for the development of bicycle transportation in Fresno County are as follows:

- Planning - The recognition and integration of the bicycle as a valid transportation mode in transportation planning activities
- Physical Facilities - Safe, convenient, and continuous routes for bicyclists of all types that interface with and complement a multimodal transportation system
- Safety and Education - Improved bicycle safety through education and enforcement

- Encouragement - Increased acceptance of bicycling both as a legitimate transportation mode on public roads and highways and as a transportation mode that is a viable alternative to the automobile
- Implementation - Increased development of the regional bikeways system and related facilities by maximizing funding opportunities

Existing System Inventory

The planned bikeways regional system is shown in Figures 2-12 and 2-13. 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.

Accomplishments

Since the adoption of the 1984 General Plan, the City of Fresno has modified its street design standard for the construction of collectors and arterials in newly developing areas to add five feet per side for a bike lane. The adoption of this standard has promoted the long-term development of a bikeway system in newer areas. Provision of this right-of-way in advance avoids the conflicts that arise when the loss of on-street parking becomes a necessary part of bikeway implementation. Within the City of Fresno, several miles of bikeways have been added, particularly in the Woodward Park and Bullard Community Plan areas, but elsewhere in the community as well. The City of Clovis provides for bike lanes along designated streets in accordance with adopted specific plans and has implemented bikeways along segments of several major streets.

Cities outside of the metropolitan area have also proceeded with efforts to incorporate bikeway facilities in their plans and programs. For example, the City of Reedley adopted a Kings River Corridor Specific Plan in January 1991 that included proposed bikeway facilities. Reedley also approved a General Plan Update in August 1993 and a subsequent Specific Plan that include both city bikeways and bikeways that provide connectivity to the Regional Bikeway System.

Coalinga and Kerman recently updated their general plans to include a bikeways section. Fresno, Selma, Sanger, Parlier, Reedley and Fresno County have all addressed bicycle transportation in their general plan circulation elements. In addition, Coalinga and Huron, and more recently Fresno, Clovis, Kingsburg, Reedley, Sanger and Selma, have developed Bicycle Transportation Plans in order to compete for funding under the Bicycle Transportation Account.

Several communities have competed successfully for funding under the Safe Routes to School Program. These include Clovis, Reedley, Kerman, Fresno, Mendota, Sanger, Orange Cove, San Joaquin, Firebaugh, and the County itself.

The City of Fresno has taken an active role in requiring the installation of bike racks in new development to encourage increased use of bicycling and bus commuting. The City of Fresno has also installed bike racks on its entire transit fleet, as has the City of Clovis on its Stageline transit fleet and the Fresno County Rural Transit Agency on its intercity transit fleet. Newer busses of the Rural Transit Agency's intra-city fleet are also equipped with bike racks.

The City of Fresno has established a Bicycle Pedestrian Advisory Committee that advises the City Council and Mayor on all matters involving bicycle transportation. In addition, the City of Fresno contracted with the consulting firm Fehr and Peers in 2009 to prepare a comprehensive Bicycle Transportation Plan. The Plan is estimated to be completed by mid-2010.

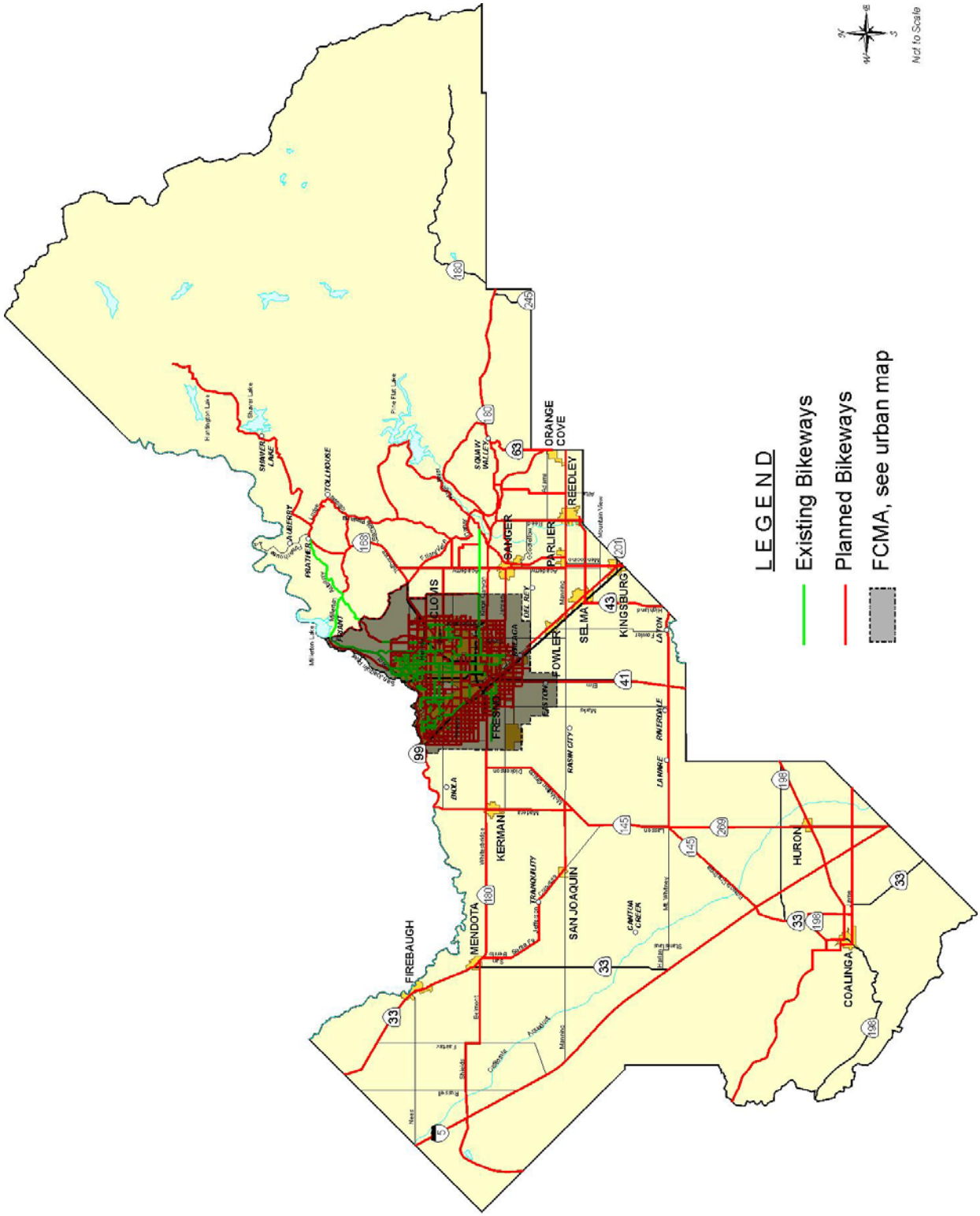


FIGURE 2-12
Fresno COG 2011 RTP Draft SEIR
Rural Bikeways System

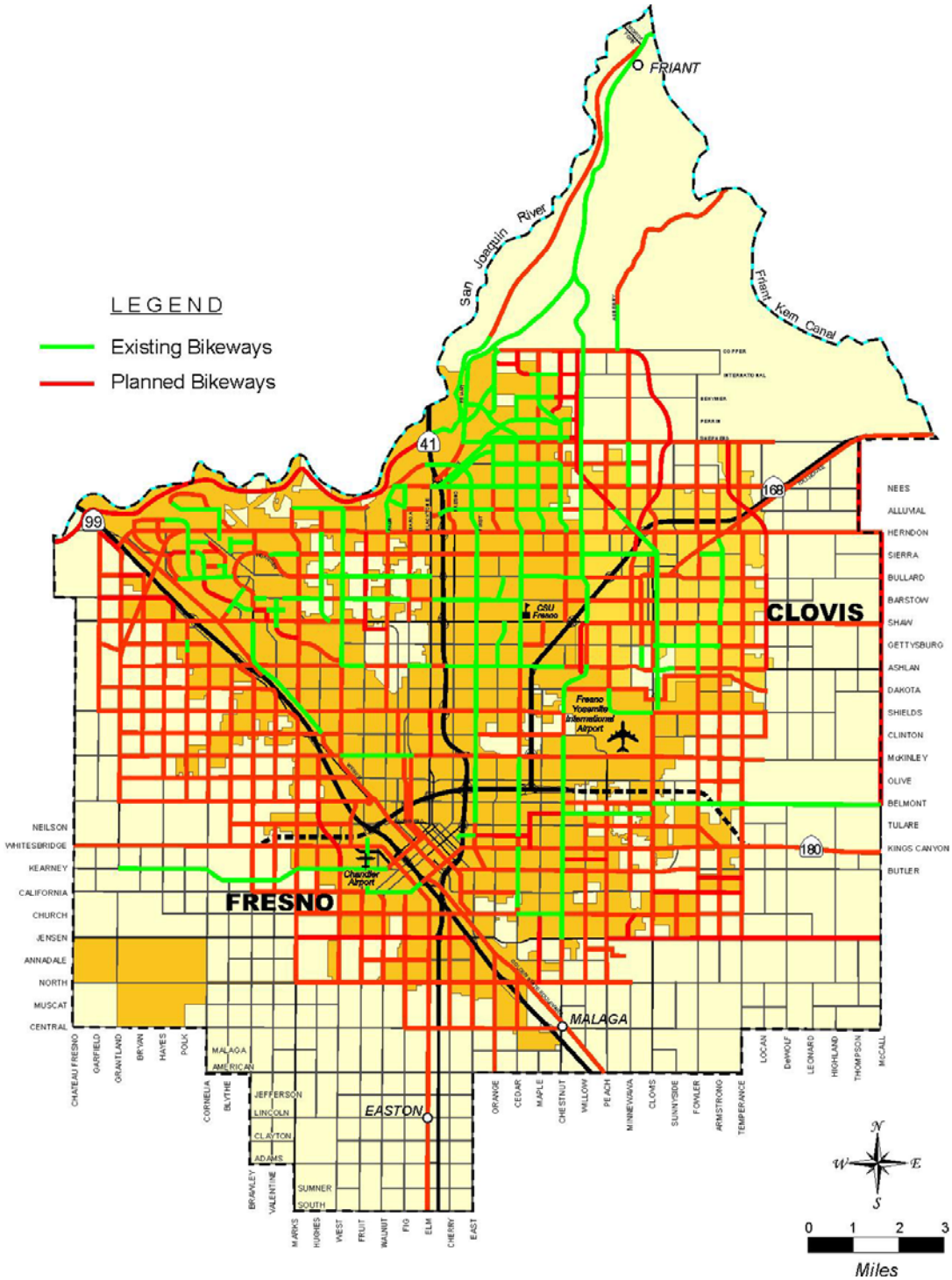


FIGURE 2-13
Fresno COG 2011 RTP Draft SEIR
Urban Bikeways

The Measure C Extension approved by the voters in November 2006 requires that by January 1, 2012, all jurisdictions within Fresno County will have updated and/or adopted a Master Plan for Trail, Bicycle and Pedestrian Facilities that promotes connectivity within all of Fresno County and its urban areas. The Master Plan will be the guiding document for upgrade and/or installation of such facilities. If any jurisdiction fails to meet this goal, the earmarked funds for trail, bicycle and pedestrian facilities shall be withheld by the Fresno County Transportation Authority until such time as a jurisdiction is in compliance.

Measure C Extension earmark funds may be used for new construction of pedestrian/bicycle trails and for the development of the Master Plan as well as retrofitting pedestrian/bicycle trails within the circulation system that existed as of January 2007 or the date of adoption of the Master Plan. Trails built with earmarked or other Measure C Extension funds shall, at a minimum, be designed in accordance with the design criteria for bicycle paths and multi-purpose trails set forth in the California Highway Design Manual, Chapter 1000, Bikeway Planning and Design, with certain caveats as noted in the Final Measure C Extension Expenditure Plan.

The Final Measure C Extension Expenditure Plan includes additional requirements applying to all streets, roads, and highways utilizing either regional or local allocation funds. For example, every highway, expressway, super-arterial, arterial, or collector within the County constructed or reconstructed in whole or in part with Measure C Extension funds shall include accommodations for bicycle travel either by a shared roadway or by bike lane. Reference is made to the Expenditure Plan for a description of these additional requirements, including exceptions to the requirements.

Needs Assessment

While much of the basic work of planning for regional and metropolitan bikeway systems was done in this area in the 1970s and 1980s, it is important to periodically reevaluate the planned bikeway system and make adjustments as necessary to reflect changes in growth patterns and the development of new activity centers. As noted above, both the City of Fresno and the County of Fresno are currently developing comprehensive revisions to their Bicycle Master Plans/Bicycle Transportation Plans, with completion in 2010. The City of Clovis also expects to update its Bicycle Transportation Plan beginning in 2010. However, the need remains, particularly with many mid-sized and smaller cities in Fresno County, to prepare and adopt Bicycle Transportation Plans that discuss the eleven required elements listed in Section 891.2 of the Streets and Highways Code. These plans are required in order for local agencies to be eligible to compete for Bicycle Transportation Account funding.

There is an ongoing need to focus on implementation of facilities through development project requirements and through active programs undertaken by the county or the cities. Most likely the programmatic initiative for facility implementation rests with traditional public works or traffic engineering staffs who work with street development and pavement marking and signing programs. With competition for funds and staff time, local programs can be dependent on the priorities set by both governing bodies and by agency staff. Coordination between agencies on regional routes can also diminish unless a forum exists which promotes active participation. The Council of Fresno County Governments can assist local agency staff by providing an opportunity to share information and coordinate future efforts, taking a proactive position to encourage and facilitate bicycle use. There have been two recent examples of this Fresno COG role. First, the Fresno COG, with assistance from a non-motorized committee formed for this purpose, assisted the County in determining the unincorporated area bikeway network for inclusion in the County's recent general plan. Second, the Fresno COG prepared in April 2001 a "template" Bicycle Transportation Plan for use by cities in Fresno County. The "template" plan has been and will continue to be particularly useful to the smaller communities as the larger communities typically have their own staffs to manage their planning processes.

In addition, a number of pedestrian safety enhancements such as pedestrian over-crossings and under-crossings at dangerous intersections, street and sidewalk repairs and installations, and additional curb cuts and handicap ramps have also been identified within communities as worthwhile projects should future funding become available.

Proposed Actions

Future Planning Activities

The Fresno COG began implementation of the Measure C Extension Pedestrian/Trails/Bicycle Facilities Program in Fiscal Year 2007-08. By January 1, 2012, all jurisdictions within Fresno County will have updated and/or adopted a Master Plan for trail, bicycle and pedestrian facilities that promotes connectivity within all of Fresno County and its urban areas.

- Short-Term Program (1 - 4 Year Programs and Projects)

  The Transportation Development Act requires that 2% of the Local Transportation Fund be set aside each year for bicycle and pedestrian purposes. The COG apportions these monies annually to each jurisdiction, proportionate to its population. Recent years have shown growing use of these funds for pedestrian projects, particularly as local jurisdictions looked for funding to meet ADA requirements. With growing emphasis on air quality and Transportation Demand Management objectives and with funding available through the Measure C Extension Program that must be spent on ADA improvements, the focus may shift back to bikeway system implementation.

  Fresno County will continue to implement planned facilities as a part of its road construction program. The cities of Fresno and Clovis will stripe and sign those major street segments that have recently been constructed and will be constructed, particularly within the growing northern, eastern and western portions of the Fresno Clovis Metropolitan Area. The RTP anticipates that the cities of Fresno and Clovis and Fresno County will continue to implement the regional bikeway system in a timely manner and that the smaller cities within Fresno County also will continue to implement their proposed bikeway plans as funding provides.

  In addition, the Measure C Extension Program requires every highway, expressway, super-arterial, arterial or collector within the County constructed or reconstructed in whole or in part with Measure C funds shall include accommodations for bicycle travel either by a shared roadway or by bike lane. A shared roadway includes a paved shoulder or a wide outside lane. The Measure C Extension Program includes other provisions as well, including a listing of exceptions to the requirements.

  In 2008, the State of California enacted AB 1358, the Complete Streets Act, which requires cities and counties to incorporate provisions for multimodal streets into their General Plan Circulation Elements starting in 2011. This requirement will result in streets, roads and highways that better meet the needs of pedestrians, bicyclists, and others in a manner that is suitable to the rural, suburban or urban context of the General Plan.

- Long-Range Improvement Plan

  The Master Plan for Trail, Bicycle and Pedestrian Facilities will designate the most suitable location for the long-term development of bikeway corridors for commuting and recreation. A detailed description of the metropolitan and rural cities routes will be included in the Master Plan, development of which is expected to begin in fiscal year 2011-12. Through this planning effort and other means, the Fresno COG, in conjunction with its member agencies, will renew efforts to encourage bicycle travel and to coordinate metropolitan and regional planning efforts.

  The 20-year Measure C Extension Program estimated funding total for bicycle facilities is $15 million, for pedestrian/trails in the urban area (Clovis and Fresno Spheres of Influence) is $37 million, and for pedestrian/trails in the rural area is $16 million.

Rail

The movement of inter-city freight is an important function of the rail system in that it provides an alternative mode for the transport of the wide variety of agricultural commodities and manufactured goods produced within the region. Movement of freight by rail results in significant reductions in the number of trucks using major inter-regional roads such as Freeway 99 and Interstate 5, thereby reducing traffic congestion, air pollution, and maintenance costs.

The Surface Transportation Board and the California Public Utilities Commission (PUC) have historically exercised strict control over railroad operations, including shipping rates and the abandonment, construction, relocation and consolidation of railroad right-of-way. At the regional level, the Regional Transportation Plan can provide a general framework to assure coordination and interfacing with other transportation modes in an overall planning process.

Passenger rail has also received renewed emphasis, with the result that local governmental bodies have more fully participated in the process of policy making and planning for inter-city rail passenger service. Specifically, with the establishment of the San Joaquin Valley Rail Committee in February of 1987, all regions of California directly affected by the San Joaquin passenger service can now participate in planning the route's future.

Existing System Inventory

The rail network in Fresno County consists of approximately 280 miles of operating main and branchline right-of-way (Figures 2-14 and 2-15). The Union Pacific Railroad (UP) and the Burlington Northern Santa Fe Railroad (BNSF) each operates one mainline that passes through Fresno County. In addition, there are four branchlines that either pass through (Exeter Subdivision) or lie completely within (West Side Subdivision, Riverdale Subdivision, Clovis Subdivision) Fresno County. These branchlines are operated by the San Joaquin Valley Railroad Company, a RailAmerica Company. Additionally, the railroads operate many spur lines to serve industrial and agricultural clients, some of which operate on adjacent property by agreement between the railroad and the property owner.

Amtrak continues to play a role in the balanced transportation system of the San Joaquin Valley. Amtrak operates four trains per day between Bakersfield and Oakland and two trains per day between Bakersfield and Sacramento with each train making one round trip per day. This allows for six north-bound and six south-bound schedules each day. Amtrak service has helped fill a service level void that exists in mass transit between inter-city bus and airline services. Also, there is Amtrak dedicated bus service connecting rail stations with cities not directly served by the San Joaquin trains.

Fresno plays a strong role in the success of the San Joaquin service. Fresno is the second busiest origin/destination of all the stations serving only the San Joaquin Route. As ridership between the Valley and Southern California has increased, these trips to and from Southern California cities have become a significant share of the San Joaquin Route revenue miles.

The Amtrak San Joaquin trains have made significant improvements in fare recovery, operating efficiency, and on-time performance. The feeder bus service, more frequent service, and improved on-time performance are the major reasons the service has increased ridership over the last several years.

The trains continue to provide an important service to the residents of the Valley and ridership figures indicate the service is being used by more people every year. The retention and expansion of this service is essential to the continuation of a balanced transportation system in Fresno County.

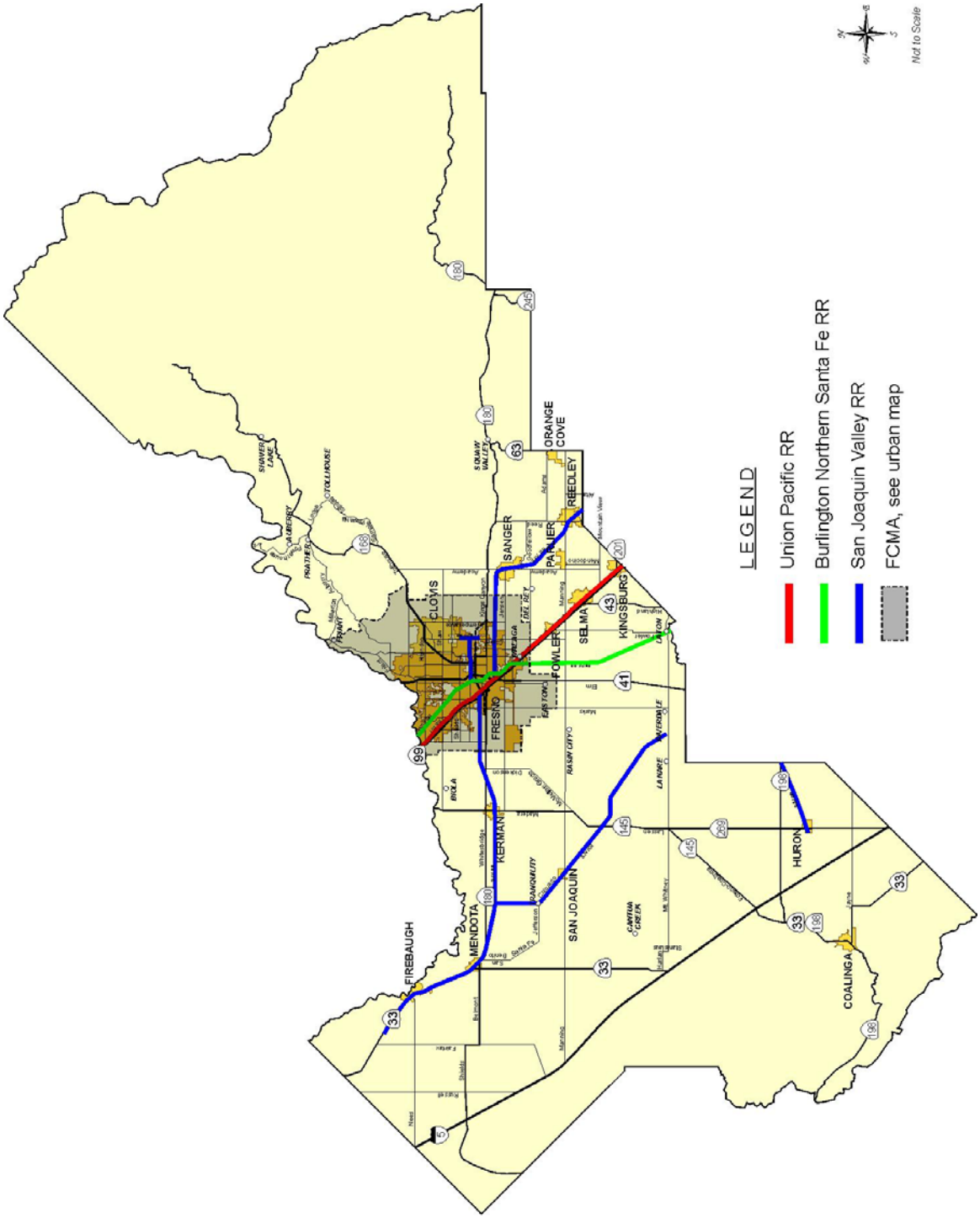


FIGURE 2-14
Fresno COG 2011 RTP Draft SEIR
Rural Rail System

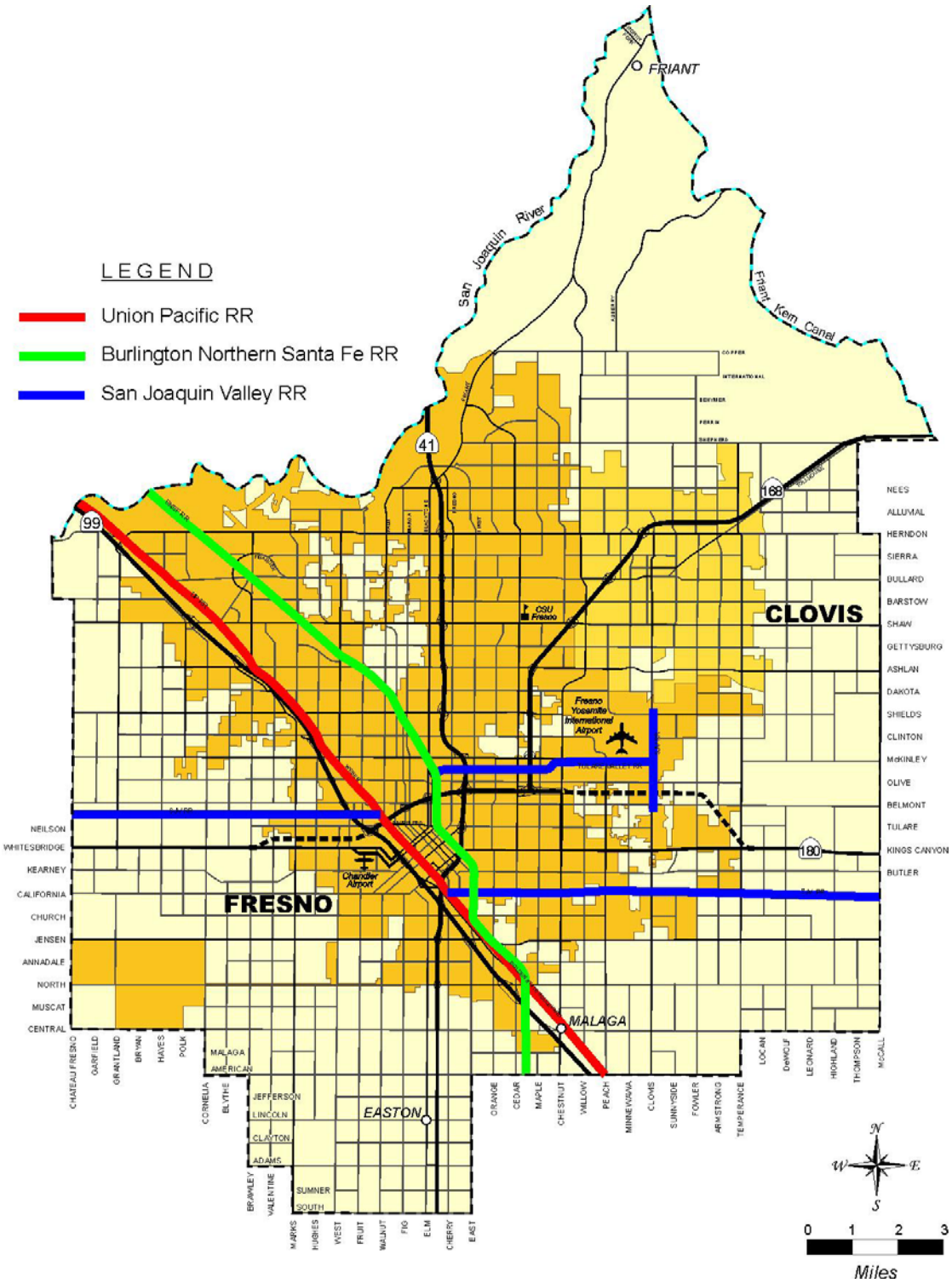


FIGURE 2-15
Fresno COG 2011 RTP Draft SEIR
Urban Rail System

Accomplishments

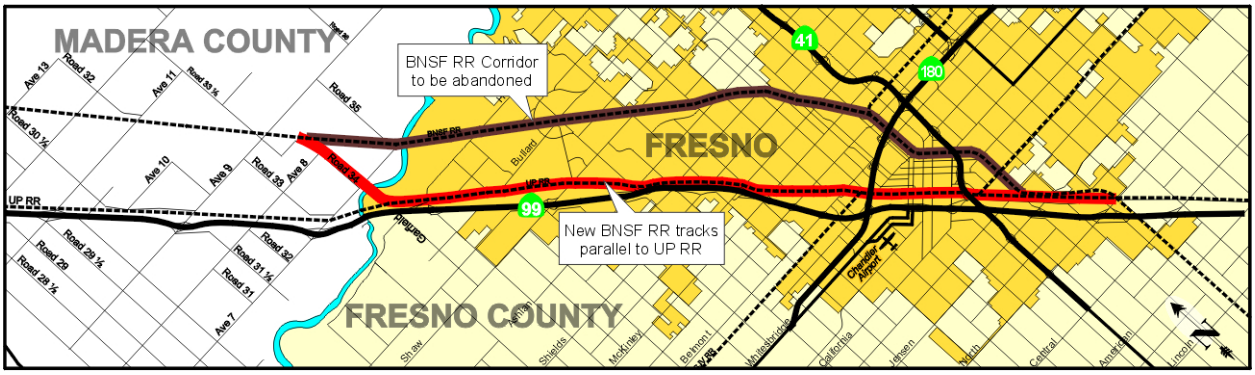
Recent Planning Activities

- Consolidation Efforts

The existing BNSF tracks pass through the urbanized portion of the City of Fresno, thereby creating numerous transportation problems. Moving all rail traffic to the UP corridor is important as it would: 1) eliminate at-grade train/vehicular conflicts along the BNSF corridor, resulting in a safer environment for motorists and pedestrians; 2) eliminate delay to emergency service vehicles due to train/vehicular conflicts; 3) eliminate the slower speeds required on the BNSF corridor because of its location in more urbanized areas of the community; 4) eliminate the need for additional grade separation structures on the BNSF; 5) make available the BNSF corridor or portion thereof for multi-use trail purposes and/or potential local or light rail service; and 6) reduce air pollution emissions through traffic flow improvements.

The City of Fresno, Fresno County, the COG, and the railroads previously contracted with HDR Engineering to provide an independent cost analysis for rail consolidation in the Fresno Urban Area. That analysis was completed in July 1993 and included preliminary cost estimates to relocate the BNSF mainline track into a single corridor now owned and operated by the UP, and build needed grade separation structures. A conceptual alignment was also developed as shown in Figure 2-16.

FIGURE 2-16
Conceptual Alignment of the Proposed BNSF/UP Rail Consolidation



BNSF and UP trains would operate on the UP alignment, from the point where the two railroad tracks now cross at North Avenue and Golden State Boulevard near Calwa to a point north of Herndon Avenue. At that point, the BNSF would cross the San Joaquin River on a new bridge structure and curve into Madera County to connect again with BNSF's existing main line north of Avenue 7. The study estimated the total cost of consolidation to be about $206 million, including additional grade separation structures in the Union Pacific corridor costing an estimated $96 million. Many of these grade separation structures will eventually have to be built even if consolidation does not occur.

The City of Fresno, the County of Fresno, the Fresno COG, the BNSF and the UP jointly agreed to fund an updated study on rail consolidation, including new cost estimates. HDR Engineering, Inc. was again retained to conduct the study, which was completed in March of 2002. Since the 1993 study, two grade separations were completed (Shaw Avenue and Marks Avenue) and ten grade crossings in the city were closed. Updated cost estimates ranged from $275 million to $319 million depending on the alternative, a 38% increase over the

estimates developed in the 1993 study. However, these cost estimates do not include the cost of purchasing the portions of UP's right-of-way to be deeded to BNSF, the cost of compensating or relocating industries that will lose rail service if the BNSF corridor is completely abandoned, the cost of mitigation measures, and certain other costs.

In 2009, the Fresno COG entered into an agreement with the California High-Speed Rail Authority to jointly fund a study to define and evaluate an alignment that would accommodate both high-speed trains and rail consolidation or rail realignment. The study evolved to focus more narrowly on rail realignment as the Authority acted to implement the high-speed train project. The study concludes a stand-alone rail realignment projects can be expected to cost between $803 million and $1.38 billion depending on the alignment developed.

- Light Rail, Commuter Rail, and other Fixed Guideway Rail Systems

Although earlier studies indicate there is not currently sufficient ridership for a light rail, commuter rail, or some other fixed guideway rail transit system, it is prudent from the standpoint of long-range planning to identify and preserve rail corridors that may be needed in the future, given our growth potential. Evaluation of a countywide fixed guideway rail transit system should consider future air quality constraints in the Valley and the alternative to additional lanes on existing commuter corridors between smaller Fresno County cities and the metropolitan downtown hub. Caltrans continues to examine the rail alternative on right-of-way of new freeway projects.

Existing rail trackage within the county has been inventoried and analyzed for its future benefit as mass transportation corridors. The existing trackage is extensive and located in areas that could well serve many of the heavily developed portions of the metropolitan area and other areas of the county. The thirteen-mile long Clovis Branchline/Pinedale Spurline Railroad Corridor was acquired by the cities of Fresno and Clovis in December 1997 for alternative transportation purposes, including potential future light rail.

It is feasible that commuter rail routes may someday extend into Tulare, Kings and Madera Counties. There is significant commuter activity between the Fresno-Clovis Metropolitan Area and other central San Joaquin Valley urban areas such as Visalia, Madera, and Hanford.

In addition, in 1986 Fresno County voters adopted a ½ cent sales tax for transportation purposes. Approximately 70 percent of the highway funds are to be utilized for an urban freeway system, most of which has been completed, including undeveloped highway medians that could serve as future light rail or some other fixed guideway rail transit corridors. The voters of Fresno County approved a twenty-year extension of Measure C effective July 1, 2007. Funding is included for Phase II of the Public Transportation Infrastructure Study (PTIS), which will look to the future and identify how Fresno County residents can take advantage of new technologies and advances in public transit and land use planning.

Current criteria utilized by state and federal agencies for light rail or other fixed guideway rail transit may be modified in the future. Such factors as changes in the economy, air quality, fuel costs and the availability of private vehicles may also increase the attractiveness of fixed guideway rail transit to local agencies and the general public. Both planning and contingency studies on the feasibility and routing of fixed guideway rail transit should continue.

- Additional Amtrak Service

A sixth daily round trip was added on March 18, 2002. Both the fifth and sixth trains provide a direct train connection to Sacramento while the other four currently utilize Amtrak bus service for the portion of the trip between Stockton and Sacramento. Predominant right-of-way ownership is by the BNSF (Port Chicago – Bakersfield). The UP owns

39 miles at the north end of the route between Oakland and Port Chicago and 49 miles in the new segment between Stockton and Sacramento. Caltrans and Amtrak anticipate there will be eventual demand for eight round-trips on the San Joaquins, with the seventh round trip (by rail from Stockton to Sacramento) occurring in 2010/11 and the eighth round trip (by rail from Stockton to Oakland) occurring in 2012/13.

- San Joaquin Valley Rail Committee

A San Joaquin Task Force, consisting of a coalition of Amtrak users and rail service interest groups, was formed in 1983 to provide support for the continuation of Amtrak service throughout the Valley and to offer suggestions for service improvements. In 1987, this task force was replaced by the Steering Committee of Caltrans' Rail Task Force, now called the San Joaquin Valley Rail Committee. The Rail Committee provides a more structured forum for Valley rail concerns to be voiced. This committee has representatives appointed by Valley cities and counties and other non-Valley counties that are served by Amtrak's San Joaquin service.

A local rail committee was formed by the county of Fresno in 1985, although much of the staff time was funded through the COG. However, in May 1999, the COG Policy Board approved the establishment of a COG Rail Committee that would be named by and report directly to the Policy Board. The County's rail committee was subsequently abolished. The COG Rail Committee advises the Policy Board on all rail issues including high-speed rail, rail consolidation, Amtrak rail passenger service, rail abandonments, rail freight service, and other rail issues. Makeup of the committee includes one elected official each from the Fresno County Board of Supervisors, the Fresno City Council, the Clovis City Council, the Westside city councils as a whole, and the Eastside city councils as a whole. Public members include two members each appointed by the Board of Supervisors and the Fresno City Council, and one member each appointed by the Clovis City Council, Caltrans, the Eastside city councils as a whole and Westside city councils as a whole. There are a total of thirteen voting members on the COG Rail Committee.

- High-Speed Rail Authority

The California High-speed Rail Authority is the successor organization to the earlier High-speed Rail Commission, which determined that high-speed rail is technically, environmentally and economically feasible once constructed, and would be operationally self-sufficient. The Authority's purpose is to fund and construct the high-speed rail system. In June 2000, the Authority produced a business plan for designing, building and funding a high-speed train system for the state. The Authority's plan, "Building a High-Speed Train System for California: Final Business Plan," satisfied a legislative requirement for showing where a statewide high-speed train network could go, how it could be built, how it could integrate with other forms of transportation and how it could be financed. Also in 2000, the Governor signed AB 1703 (Florez and Costa), which required the Authority to prepare a program Environmental Impact Report (EIR) and Tier 1 Environmental Impact Statement (EIS) on the statewide high-speed train system. The legislation also instructed the Authority to work with the Business, Transportation and Housing Agency to "develop and implement a strategy to maximize federal funding for the high-speed train network and the complementary, conventional train improvements." The Authority certified the Final Program EIR/EIS on November 2, 2005. The Fresno COG will continue to work with the Authority and its consultants to provide for consideration of Fresno County consensus positions regarding the many high-speed rail issues in subsequent environmental documents and other plans and studies.

- The Intercity Rail Program

The vision of the Intercity Rail Program (IRP) is to provide a rail transportation alternative to other travel modes; provide relief to highway and airway congestion; improve air quality; conserve fuel; and contribute to efficient and environmentally superior land use. To achieve this vision for inter-city rail in California, service must be frequent

and reliable, and serve the major inter-city destinations with travel times competitive with the auto. The San Joaquin Corridor, the Pacific Surfliner Corridor, and the Capitol Corridor are all supported by operating and capital funding from the state.

- New Amtrak Station Facility

The restored historic Santa Fe Depot was dedicated on February 12, 2005. The City of Fresno continues to make improvements to the facility and site utilizing funds from the Transportation Enhancement Program and other programs.

- Rail Abandonment

Abandonment of railroad branch lines within Fresno County is detrimental to users relying solely on rail freight service and results in the loss of potential light or commuter rail corridors that would be almost impossible, or at least very difficult, to replace. State law requires that local jurisdictions have a right to review proposed abandonments and have the right of first refusal of that right-of-way. Local agencies in Fresno County exercise their review rights whenever abandonments are proposed. Additionally, Fresno County rail policy seeks legislation to require that all lines proposed for abandonment is brought under public ownership as a precondition to abandonment. COG staff is currently monitoring the potential abandonment of the segment of the San Joaquin Valley Railroad in Tulare County between Exeter and Jovista for its implications for Fresno County and future freight and passenger rail.

In December 1997, the cities of Fresno and Clovis acquired title to those portions of the Clovis Branchline/Pinedale Spurline Railroad Corridor which lie within their respective spheres of influence. The Corridor extends, within the City of Fresno and its Sphere of Influence boundary, from North Ingram Avenue to North Willow Avenue and adjacent to North Willow Avenue from East Copper Avenue to its intersection with the Fresno Sphere of Influence boundary and, within the City of Clovis and its Sphere of Influence boundary, from its intersection with the Clovis Sphere of Influence boundary to approximately the East Dayton Avenue alignment. With the exception of the central portion, the corridor has been developed as a multi-use trail. In the long-term, the Corridor may also accommodate transit in addition to pedestrian and bike paths. Transit is understood to mean local rail, light rail, or other transit modes.

- Rail Inventory

On April 30, 1990 the COG submitted a Commuter and Inter-City Rail Right-of-Way Inventory to the California Transportation Commission, consisting of the following:

- All potentially available and suitable right-of-way for commuter and inter-city rail development
- All right-of-way owned by railroad corporations which may or may not be for sale at the present time
- Full consideration of the potential for passenger service on railroads which are not expected to be for sale, including the leasing of operating space and other operating arrangements on currently operated railroads

The Inventory was updated in 1992 to include a review of the 1990 Rail Right-of-Way Inventory and an updated survey of corridors in the County that may have potential for passenger rail service.

The Fresno County Rail Corridor Preservation/Acquisition and Transportation Alternatives Study were adopted by the COG in January 1997. The primary purpose of the study was to inventory the different railroad branchline corridors within Fresno County and evaluate their potential for alternative transportation purposes, including potential future fixed guideway rail transit. The study concluded that although the majority of branch line corridors

within the County have already been abandoned, dismantled and sold, most of the corridors that have the greatest potential to provide rail transit service are intact. The study prioritizes the different corridors for preservation and identifies funding sources and strategies.

Reference should be made to the 1990 Commuter and Inter-City Rail Right-of-Way Inventory, the 1992 update of the inventory, the 1997 Fresno County Rail Corridor Preservation/Acquisition and Transportation Alternatives Study, and the 2004 Caltrans Rail Right-of-Way and Abandoned Rail Corridors Evaluation Study for detailed information on the different railroad mainlines and branchlines existing in Fresno County, including their potential for rail transit service.

- Potential Rail Corridors in Freeway Right-of-way

  Freeways 41, 180 and 168 within the Fresno Clovis Metropolitan Area each contain an ultimate median of thirty-six (36) feet, which would provide sufficient width for light rail, except possibly at interchanges. In addition to the ultimate median, twenty-four (24) feet for two additional median lanes is reserved for HOV, Dedicated Bus or regular traffic lanes, for a total right-of-way in the median of sixty (60) feet.

- California Inter-Regional Intermodal Service (CIRIS)

  The primary objective of this study was to estimate the market for the California Inter-Regional Intermodal Service (CIRIS), a short-haul rail intermodal service that would connect the San Joaquin Valley with the Port of Oakland. This short-haul rail intermodal service is viewed by many as an alternative that would reduce the amount of truck traffic in the region by diverting some of the goods between the Valley and the Port from the current truck dray operations to rail. Furthermore, the Fresno area location for the rail alternative appears favorable because it has both a large market and a relatively low cost differential between the CIRIS service and the current truck-only drayage operations. Public benefits from the operation of the CIRIS service include lower congestion and emission reductions due to reduced truck traffic

Potential Commuter Rail Corridor Extension to Adjoining Counties

In addition to identifying and preserving potential future commuter or light rail corridors in Fresno County, the transportation needs and resources of adjacent counties should also be considered. The counties of Madera, Tulare and Kings have also developed rail inventories that may be helpful in determining which rail corridors have potential for regional commuter or light rail service. Kings, Tulare, and Fresno counties, along with the San Joaquin Valley Railroad, private companies and the San Joaquin Valley Unified Air Pollution Control District, cooperated to rehabilitate the rail between Visalia in Tulare County and Huron in Fresno County in order to improve and reestablish freight rail service. The two-year project was completed in 2003. At some future point, the Cross Valley Rail Project may be extended to Coalinga and may also provide commuter rail opportunities.

Completed Improvements

Several rail-related construction projects in Fresno County have either been started or have been completed during the past three years. These include the project to double-track the 8.6 mile segment of the BNSF mainline between Calwa and Bowles in Fresno County, completed in early 2007; the restoration of the historic Santa Fe Depot for use as Fresno's Amtrak station, completed in early 2005; and, the construction of an underpass at Weldon Avenue and the Burlington Northern Santa Fe.

Local agencies, Amtrak, community rail interest groups and State and Federal legislators and agencies continue to lay the groundwork for additional significant changes. Major efforts are focused on two goals, rail consolidation and high-speed rail.

Needs Assessment

The following rail transportation needs for Fresno County have long been identified.

- Consolidation of all Burlington Northern Santa Fe mainline rail traffic onto the Union Pacific corridor from the point where the two railroad tracks cross at North Avenue and Golden State Boulevard near Calwa to a point north of Herndon Avenue.
- Additional inter-city train service for the Amtrak San Joaquin route.
- Rerouting the Amtrak San Joaquin service from the Burlington Northern Santa Fe to the Union Pacific alignment between Fresno and Stockton.
- Construction of a new multimodal station in Fresno on the Union Pacific alignment subsequent to or concurrent with consolidation.
- Obtaining and preserving abandoned railroad right-of-way through the County of Fresno for future local transportation purposes, including commuter or light rail.
- Long-range planning and corridor preservation for potential future commuter or light rail or other fixed guideway mass transit applications in Fresno County.
- Development of additional direct passenger rail service rather than connecting dedicated bus service between Stockton and Sacramento and new passenger rail service between Bakersfield and Los Angeles as a logical expansion of Valley train service.
- Assessment of potential commuter and light rail and other fixed guideway rail transit systems in Fresno County.

Proposed Actions

Future Planning Activities

Rail planning will continue to consider the above needs with emphasis on constructing railroad grade separations, rail consolidation, high-speed rail, and fixed guideway transit systems.

The extension of Measure C, approved by the voters in November 2006, requires progress be made on rail consolidation. An evaluation of its feasibility and the likelihood of securing the additional funding are to be included in the biennial update of the Expenditure Plan. A more thorough review should take place at ten years. If rail consolidation is not programmed with construction imminent within fifteen years after the Measure passed, the funds will revert to grade separation projects that coordinate with transit improvements and provide the greatest amount of congestion relief and air quality benefit. A portion of the funds may be used to fund the effort of securing the additional funding from state, federal, or other agencies to fully fund rail consolidation. This would include financing a position to seek the additional funding, securing the services of a lobbyist for this project, and working on operations issues along the corridors. Fresno Area Residents for Rail Consolidation (FARRC) and the City of Fresno will work with the Fresno County Transportation Authority to pursue the additional funding. Should rail consolidation occur, the land along the BNSF tracks will revert back to the City and County of Fresno for trails, bikeways, and pedestrian facilities.

The City of Fresno will continue to rehabilitate the existing historic Santa Fe depot and site using Federal Transportation Enhancement Program funds and other sources of funding. COG staff anticipates working closely with the City of Fresno to identify and utilize additional funding sources to complete the site improvements so that the new station will function effectively as a multimodal facility.

The potential for a light rail, commuter rail and other systems of fixed guideway transit in the Fresno-Clovis Metropolitan Area and throughout Fresno County will again need to be evaluated. Options must be kept open when evaluating mass transit and right-of-way needs in the future. Phase I of the Public Transportation Infrastructure Study has been completed. The purpose of the Study is to evaluate mobility needs and opportunities, and to identify strategies for public transit and transit supportive infrastructure development that will result in wider acceptance and use of non-automobile transportation modes such as public transit, bicycle and pedestrian travel. In addition to the development of viable alternative public transportation options for Fresno County, this study seeks to develop ridership projections and cost estimates for various scenarios that will be used to establish a long-range plan leading to optimum connectivity within the region. The extension of Measure C includes funding for Phase II of this Study.

Fresno COG member agencies will continue to petition the Public Utilities Commission for funding of grade separations, including separations on the Union Pacific mainline where both Burlington Northern Santa Fe and Union Pacific rail traffic will one day be consolidated, with priority given to public safety and improving the circulation system. The COG and member agencies will also investigate the establishment of "quiet zone communities" within Fresno County. Current California Public Utilities Code rules require the sounding of the locomotive horn or whistle when crossing any street, road, or highway at grade level. Newly proposed federal rules would provide potential relief to communities by establishing rules for ensuring railroad grade-crossing safety so that the sounding of the locomotive horn can be avoided. A community desiring to become a Quiet Zone must install Supplemental Safety Measures (SSM's) or additional warning device/traffic control apparatus that can effectively compensate for the absence of the locomotive horn or whistle.

During the next few years, much rail planning activity will continue to center around high-speed rail in an effort to maximize its benefits for Fresno County. This will include the ongoing development of Fresno County consensus positions on the many aspects of high-speed rail and the effective communication of those positions to the High-Speed Rail Authority. COG will continue to work closely with the Authority and its staff and consultants during the development of the project-level environmental document for Fresno County and the San Joaquin Valley, and other studies and plans.

Local agencies, Amtrak, rail interest groups and state agencies continue to work together and with the railroads to lay the groundwork for significant railroad improvements in the future.

Short-Range Improvement Plan

- Grade Separation

  No grade separation projects are currently scheduled.

- Rail Consolidation

  The extension of Measure C provides for $102.5 million over the twenty-year period for rail consolidation. Effective July 1, 2007, funding becomes available for planning, design, and environmental studies as well as lobbying activities required to secure additional funding. In 2009, the COG entered into an Agreement with the California High-Speed Rail Authority to retain a consultant to define a potential project that would achieve the objectives of both high-speed rail and rail consolidation/rail realignment. While the Authority subsequently withdrew its support for a joint solution, instead focusing on just the high-speed train project, the COG will continue to investigate all available means to accomplish this project, including linkages with the development of a California high-speed rail system and other state and federal initiatives.

- Rail Passenger Station

  The rehabilitation of the historic Santa Fe Depot for use as the new rail passenger station in downtown Fresno on the Burlington Northern Santa Fe tracks was completed in early 2005. However, additional improvements to the Depot itself and to the site have either been programmed or will be programmed as funds become available.

- Commuter Rail Feasibility Study

  The extension of Measure C provides funding for Phase II of the Public Transportation Infrastructure Study. Phase II of the PTIS will provide additional information on alternative fixed guideway rail transit systems, including light rail and commuter rail. Current criteria of state and federal agencies for light rail may be modified in the future. Other factors, including changes in the economy, difficulties in achieving air quality attainment through traditional approaches, fuel costs, the availability of private vehicles, and increasing vehicular congestion and development densities may increase the attractiveness of alternative fixed guideway rail transit systems to local agencies and the general public. An analysis of existing systems in communities similar to Fresno in terms of size, density of development and other factors will comprise an important component of the study.

- Caltrans Recommendations for Amtrak

  Annual Business Plans for the San Joaquin Corridor, prepared by the Caltrans Division of Rail, identify short-term actions that, when implemented, will make the service more attractive to potential riders. The focus of Caltrans' short-term operating strategies is to improve customer service and amenities and increase the cost-effectiveness of the services. These two strategies are complementary, as an improvement in customer satisfaction should increase ridership and revenue. Recent performance standards include one percent ridership and two percent revenue gains, a farebox return projected to increase to 47.5 percent, and on-time-performance projected to continue at 75 percent.

  Actions address opening new stations and parking facilities, additional improvements to track and signals elsewhere on the line, marketing the service and public relations, expanding the "Free Transfer" program with local transit operators, adjustments to the feeder bus network, coordinating schedules with other Amtrak services, and monitoring and adjusting food service as needed. These recommendations are aimed at significantly upgrading the level of train service available to San Joaquin passengers and increasing ridership. Of particular note is an effort by Caltrans to more effectively market Amtrak San Joaquin train service to the senior market (50+ years) and minority groups, particularly Latinos because of their relatively large population, and expand the college student travel discount program.

Long-Range Improvement Plan

- High-Speed Rail

  In the long-term, rail improvements in Fresno County may occur in conjunction with the development of a statewide high-speed rail system. Specific improvements might include the construction of a new rail passenger station along the Union Pacific corridor in downtown Fresno and new grade separation structures, which might also benefit rail consolidation, along the Union Pacific corridor, the recommended alignment for high-speed rail through Fresno.

- Amtrak

  Principal long-range objectives for the San Joaquin Corridor include increasing annual ridership, annual revenues, the revenue/cost ratio, and the frequency of daily round-trip service from 4 to 5 between Oakland and Bakersfield and from 2 to 3 between Sacramento and Bakersfield. Additional objectives include reducing train running times and improving the reliability of trains. Improvements have been identified which will provide for an increase of train speeds to 110 mph where possible, in order to reduce travel times, and to operate additional roundtrips. These improvements include significant expansion in track capacity and the installation of a supplemental signal system to permit speeds higher than the current limit of 79 mph.

Financing

Existing federal financial sources include:

- Federal Transit Administration - Federal programs have been available in the past to fund urban light rail and commuter rail projects that meet federal criteria. While at this time it is doubtful that local rail projects can meet current federal criteria under these programs, COG will periodically review these criteria and other factors to determine the current feasibility of light rail or commuter rail or some other fixed guideway rail transit projects.
- The Congestion Mitigation/Air Quality program provides funding for transportation projects that will contribute to the attainment of national ambient air quality standards. The capital costs of new rail systems that initiate commuter and/or urban rail services are eligible for CMAQ funding. In some cases CMAQ funds can be used for operating costs up to three years for new transit systems. Although these funds could likely be used to purchase abandoned rail right-of-way for non-motorized transportation, because of the ability to implement such a project fairly quickly, it is not likely that these funds could be used to purchase abandoned right-of-way for a future fixed guideway rail program that is not scheduled for implementation in the near future. CMAQ funding was a key component of the funding package developed for the Cross Valley Rail Project.
- The Transportation Enhancements Activities (TE) Program provides funding for projects that integrate transportation facilities into their surrounding communities. Preservation of abandoned railway corridors is one of the acceptable funding categories of the TE Program, with an 88.53 percent federal funding share. Emphasis is given to projects that produce an immediate result in terms of trails, bikeways or other transportation modes. TE funds have been utilized along with other funding sources to develop and landscape the Clovis Branchline/Pinedale Spurline Corridor and the AT&SF Railroad Corridor through Reedley as multi-use trails.
- The Regional Surface Transportation Program (RSTP) provides funding for transit capital improvement projects and bicycle/pedestrian projects. The federal share is 88.53 percent for transit projects and 80 percent for bicycle or pedestrian related projects. Acquisition of the Clovis Branchline/Pinedale Spurline Corridor was funded in part by RSTP funds.

Existing state financial sources include:

- Public Utilities Commission - Grade crossings and railroad grade separations are implemented through the State Public Utilities Commission (PUC). Funding for such crossing and separation projects is currently limited to $15 million on a statewide basis. The application cycle begins every two years and each new list is effective for two years. The PUC also recommends to Caltrans projects to be funded from the annual $10 million Section 130 Highway-Rail Crossing Improvement Program, a federally funded program for reducing the hazards of at-grade highway-rail crossings.
- Projects selected by the Public Utilities Commission are funded 80 percent by State grade separation assistance funds with a 10 percent match from the affected railroad and a 10 percent match from the responsible local agency. Railroad projects are constructed based on their priority list ranking and on the availability of state grade separation assistance funds.

- The Intercity Rail Program (IRP) - The IRP includes five corridors identified in Proposition 108. The San Joaquin Corridor is one of those corridors. The Intercity Rail Program does not require a local match. The Department of Transportation has the lead role in the IRP. Local input is limited to sharing ideas and concerns. There is no formal application process for the local agencies to participate in. Most of these bond funds have been allocated.
- Additional funding for inter-city rail projects along the San Joaquin Corridor became available with the passage of Proposition 116. Total funding available to the corridor is $145 million. This program is also a Caltrans-driven program and all Proposition 116 funds will have Caltrans as the project manager. Most of these bond funds have been allocated.
- State Proposition 1B, approved by the voters November 7, 2006, provides $400 million for Caltrans intercity rail projects. Of this amount, $125 million shall be used for the procurement of intercity rail cars and locomotives. Other provisions of Proposition 1B include funding for commuter rail and freight rail.

Existing local financial sources include:

- City and County TDA funds and general funds may be utilized for the purchase of abandoned rail right-of-way and other rail improvements.
- Other local funds available to governmental agencies are their gas tax revenue and Measure "C" revenues. These funds are especially useful in providing the local share of State programs described above. In addition, as noted above, the extension of Measure C includes $102.5 million for the rail consolidation project. If this project is not programmed with construction imminent within 15 years of the date Measure C was extended (November 7, 2006), the funds will revert to grade separation projects that coordinate with transit improvements and provide the greatest amount of congestion relief and air quality benefit.

Anticipated Revenues & Expenditures

Valley passenger rail service is operated by Amtrak and supported by state funding. There is no local budget expended for this service.

Specific Transportation Strategies and SAFETEA-LU Management Systems

The use of motor vehicles on the street and highway system continues to be the primary travel mode within and through the region, given the rural and agricultural nature of the county. Under SAFETEA-LU and the influence of the Clean Air Act, more emphasis is placed on the efficient use of existing systems. Maintenance of existing roadways and reduction of congestion, maintenance of existing capacity, or improving capacity at a low cost are all important. Capacity is also important to modal alternatives, such as transit and cycling, which use existing streets. The efficient functioning of streets and highways also contributes to improved air quality as vehicles generally produce more air pollution at low speeds and while idling.

In addition to the planning agencies, the California Air Resources Board and the San Joaquin Valley Air Pollution Control District contribute education, research, and regulation efforts related to transportation strategies. The COG and local agencies involved in transportation and land use planning work cooperatively with the Air District to enact strategies working toward the goal of air quality. While there is overlap among the many transportation strategies, efforts fall into the following categories:

- Transportation Control Measures

  Transportation Control Measures (TCMs) are designed to reduce vehicle miles traveled, vehicle idling, and/or traffic congestion in order to reduce motor vehicle emissions. States are required to show that they have included all reasonably available control measures in the State Implementation Plans (SIPs), including

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. Typically, vehicle technology based, fuel-based, and maintenance-based measures which control the emissions from vehicles under fixed traffic conditions are not considered TCMs.

The Clean Air Act as amended in 1990 lists the following transportation control measures and technology-based measures:

1. Programs for improved public transit.
2. Restriction of certain roads or lanes to, or construction of such roads or lanes for use by, passenger buses or high occupancy vehicles.
3. Employer-based transportation management plans, including incentives.
4. Trip-reduction ordinances.
5. Traffic flow improvement programs that achieve emission reductions.
6. Fringe and transportation corridor parking facilities serving multiple occupancy vehicle programs or transit service.
7. Programs to limit or restrict vehicle use in downtown areas or other areas of emission concentration particularly during periods of peak use.
8. Programs for the provision of all forms of high-occupancy, shared-ride services.
9. Programs to limit portions of road surfaces or certain sections of the metropolitan area to the use of non-motorized vehicles or pedestrian use, both as to time and place.
10. Programs for secure bicycle storage facilities and other facilities, including bicycle lanes, for the convenience and protection of bicyclists, in both public and private areas.
11. Programs to control extended idling of vehicles.
12. Programs to reduce motor vehicle emissions, consistent with title II, which are caused by extreme cold start conditions.
13. Employer-sponsored programs to permit flexible work schedules.
14. Programs and ordinances to facilitate non-automobile travel, provision and utilization of mass transit, and to generally reduce the need for single occupant vehicle travel, as part of transportation planning and development efforts of a locality, including programs and ordinances applicable to new shopping centers, special events, and other centers of vehicle activity.
15. Programs for new construction and major reconstructions of paths, tracks or areas solely for the use by pedestrian or other non-motorized means of transportation when economically feasible and in the public interest. For purposes of this clause, the Administrator shall also consult with the Secretary of the Interior.
16. Program to encourage the voluntary removal from use and the marketplace of pre-1980 model year light duty vehicles and pre-1980 model light duty trucks.

The Revised 1996 Rate of Progress Plan for the San Joaquin Valley specifically identifies TCMs committed for implementation from 1990 through 1996. The commitments are listed within the following TCM categories:

- *TCM1 – Traffic Flow Improvements*
- *TCM2 – Public Transit*
- *TCM3 – Rideshare Programs (Rule 9001)*
- *TCM4 – Bicycle Programs*
- *TCM5* – Alternative Fuels Program

Most of the TCMs in the plans were implemented in the short term, and have been fully implemented. As a result, any creditable emission reduction benefits have been incorporated into the traffic forecasts for the region. However, the TIP/RTP provides continued funding for transportation projects that support TCM programs (e.g., traffic flow improvements, public transit, rideshare programs, and bicycle programs).

The Amended 2003 PM-10 Plan for the San Joaquin Valley was approved by EPA on April 28, 2004. Local jurisdictions included commitments in the *Amended 2002 and 2005 Ozone Rate of Progress Plan* to reduce ozone related emissions; these measures are documented in the *Regional Transportation Planning Agency Commitments for Implementation Document, April 2002.* These commitments are included by reference in the Amended 2003 PM-10 Plan to provide emission reductions for precursor gases and help to address the secondary particulate problem. Since these commitments are included in the plan by reference, the commitments were approved by EPA as TCMs. The Transportation Conformity Rule requires that the TIP and RTP "must provide for the timely implementation of TCMs in the applicable implementation plan." Documentation of the timely implementation of TCMs is included in the corresponding conformity analysis.

- Transportation Demand Management

Transportation Demand Management (TDM) refers to strategies aimed at modifying people's travel behavior. TDM specifically targets the work force, which generates the majority of peak hour traffic. Education is an essential feature of demand management, as attempts to persuade people to consider their transportation choices in an effort to reduce SOV usage. Transportation alternatives must be available. Strategies and alternative transportation modes, which are included in TDM, are as follows:

- Public transit
- Rideshare programs
- Use of flex hours
- Vanpools
- Cycling or walking
- Telecommuting
- Mixed use land development

Similar to TCMs, Fresno County, the cities, private businesses, and governmental offices implement some of these programs.

- Transportation System Management

Transportation System Management (TSM) is a program designed to identify short-range, low-cost capital improvements, which improve the operating efficiency of the existing transportation infrastructure. TSM, in coordination with the programs listed above, improves air quality and the level-of-service of the existing roadways, reducing congestion and improving circulation. These strategies fall within the responsibility of member agencies and Caltrans and include the following:

- Ramp metering
- Traffic signal synchronization
- Street widening
- Removal or limitation of on street parking
- Access limitations on arterial streets
- Turning lanes and bus bays
- Traffic engineering geometric improvements
- Bikeway facilities
- Bus terminals
- Pedestrian malls

Transportation System Management strategies are implemented by cities, the county, transit operators, and Caltrans.

- Land Use Strategies

Research done by the Air District and the Air Resources Board indicates that land use and transportation strategies can reduce vehicle trips and vehicle miles traveled, thus reducing the air pollution produced by automobiles. Within California, and the Central Valley in particular, design of residential neighborhoods still assumes reliance upon the

automobile for the majority of trips. Land use decisions in the next twenty-five years will have an important impact upon future air quality. Alternative transportation modes must be available in order for residents to have a choice. Communities can be designed to be more conducive to walking, biking, and transit use. In that process, "livable" environments are created with reduced congestion, healthier air, and increased mobility for all groups. Strategies used effectively in other communities have resulted in urban areas that have improved air quality, are viable economically, and are hospitable to their residents. Available approaches include the following:

- Compact development
- Focused infill and renewal
- Transit oriented development
- Concentration of employment densities (50 to 60 employees per acre)
- Enhanced downtown districts
- Focusing expected new growth into compact, walkable, mixed-use configurations
- Clustered activity centers- nodes, urban villages, or suburban activity centers
- Integrated street patterns which allow travel choices to neighborhood destinations
- Traditional neighborhood development (Neo-Traditional Design Movement)

In 2006, the eight regional planning agencies in the San Joaquin Valley came together in an unprecedented effort to develop a coordinated valley vision – the San Joaquin Valley Regional Blueprint. This eight county venture was conducted in each county, and was ultimately integrated to form a preferred vision for future development throughout the Valley to the year 2050. On April 1, 2009, the San Joaquin Valley Regional Policy Council adopted a preferred growth scenario for the Valley along with 12 Smart Growth Principles to guide development and promote the livable and sustainable communities mentioned above.

Existing Requirements

Transportation conformity, which originates from the Federal Clean Air Act, is the main requirement. The transportation conformity rule is codified in Title 40 Code of Federal Regulations Part 93. The conformity rule requires that transportation plans, programs, and projects conform to state, air quality implementation plans, known as the State Implementation Plan (SIP). Conformity to a SIP means that transportation activities will not produce new air quality violations, worsen existing violations, or delay timely attainment of the national ambient air quality standards.

Timely implementation of Transportation Control Measures (TCMs) is one of the conformity requirements. Fresno COG's conformity process is discussed in more detail in the Air Quality Conformity Determination for the 2011 Regional Transportation Plan. The conformity rules also require interagency consultation. Fresno COG along with the other seven Valley Regional Planning Agencies RPAs are parties in a Memorandum of Understanding with the San Joaquin Valley Air Pollution Control District (SJVAPCD) to jointly develop and implement transportation control measures. This MOU was updated and approved by each of the eight Valley RPAs and the SJVAPCD on September 9, 2009.

There have been many changes in the requirements since the 2007 RTP update.

- On April 30, 2007 the SJVAPCD adopted the *2007 Ozone Plan.* This plan addressed the attainment of the federal 8-hour ozone standard for all San Joaquin Valley residents.
- On April 30, 2008 the SJVAPCD adopted the *2008 PM2.5 Plan.*
- And on September 25, 2008 EPA redesignated the San Joaquin Valley to attainment for the PM10 National Ambient Air Quality Standard and approved the *PM10 Maintenance Plan.*

The eight San Joaquin Valley RPAs worked in concert with the SJVUAPCD to develop new transportation conformity motor vehicle emission budgets.

Regulation of emissions, while efficient, is not the only means to reduce pollution from transportation sources. Public information and education campaigns certainly play a role in promoting the behavior change necessary to impact vehicle miles traveled. Under the current Surface Transportation Reauthorization Act, public participation is an integral component of the transportation planning process. Fresno COG continues to bring transportation-related air quality issues to our Transportation Technical Committee, Policy Advisory Committee, and the Policy Board in hopes of educating not only transportation professionals, but also informing the interested public.

Accomplishments

The foregoing is descriptive of transportation strategies which are aimed at reducing congestion, improving transportation system operational efficiencies, reducing vehicle miles traveled, and persuading the work commuter to evaluate the choice of travel mode and thereby reduce dependence on single occupant vehicle (SOV). Fresno County agencies, particularly within the metropolitan area, have been involved in implementing many of these strategies since the late 1970's. Recent years have seen improvements in our ability to monitor and to model the effectiveness of various strategies. The San Joaquin Valley Unified Air Pollution Control District continues in its path of ongoing adoption of new rules, strategies, and requirements with local agencies and local businesses. The major landmark accomplishment is the attainment of the National Ambient Air Quality Standard for PM10. This took the coordinated effort of the entire San Joaquin Valley, residents, businesses, agriculture management, as well as focused funding to reduce sources of particulate matter in the Valley. Change may be slow, but it is being accomplished through collaborative interagency consultation.

Needs Assessment

Fresno COG has worked with the San Joaquin Valley Unified Air Pollution Control District on the development of the local control measure section of each State Implementation Plan. Fresno COG continues to review and improve the programs that impact air quality, such as the Congestion Mitigation and Air Quality (CMAQ) program. All of the San Joaquin Valley Regional Planning Agencies have adopted policies for distributing at least 20% of the CMAQ funds to projects that meet a cost-effectiveness threshold for emission reductions. In the 2009 CMAQ funding cycle, Fresno COG awarded approximately 38% of the available funding to cost-effective projects.

Proposed Actions

- Short-Range Plan

  Actions required and taken between now and 2014 make up the short-range transportation strategy for Fresno County. These actions are found in the Short-Range Transit Plan, the Regional Transportation Improvement Program, and the TCMs contained in existing Air District plans.

- Long-Range Plan

  Long-range strategies will be dependent on the effectiveness of short-range programs and upon available funding. Potential programs include land use planning strategies that increase densities and concentrate trips, high-speed rail, light rail or other alternative fixed route facilities, HOV lanes, and other multimodal corridor alternatives.

SAFETEA-LU Congestion Management Process

SAFETEA-LU requires Transportation Management Areas (TMAs), which are urbanized areas with a population over 200,000, to address congestion management through a process that provides for safe and effective integrated management and operation of the transportation system. Fresno is considered a TMA, and as such, is required to

include congestion management in the development of performance measures and strategies in the transportation plans.

The Congestion Management Process (CMP) provides information on transportation system performance and alternatives to relieve congestion and improve mobility of persons and goods. The intent of a CMP is identification and implementation of the most efficient use strategies for existing and future transportation facilities, where congestion is occurring or is expected to occur. The CMP includes several elements:

- Methods to monitor and evaluate the performance of the multimodal transportation system.
- Definition of congestion management objectives and appropriate performance measures to assess the extent of congestion.
- Establishment of a coordinated program for data collection.
- Identification and evaluation of the anticipated performance and expected benefits of appropriate congestion management strategies.
- Identification of an implementation schedule, implementation responsibilities, and possible funding sources for each strategy.
- Implementation of a process for periodic assessment of the effectiveness of implemented strategies.

Fresno COG's Congestion Management System (or Process) is defined in Work Element 172 of the Overall Work Program (OWP). The CMP tries to optimize the efficiency of the existing and planned transportation system. Traffic conditions were evaluated, and a list of most feasible and appropriate alternative strategies was identified for the Fresno region to manage existing and future congestion. A process/methodology has also been established to analyze Single Occupancy Vehicle (SOV) projects in order to meet the requirement of alternative strategies being considered before constructing capacity increasing projects.

California Congestion Management Program

California's Congestion Management Program became law along with the gasoline tax increase in 1990 (Proposition 111). The Congestion Management Program tied land use and development policies to transportation with the intent of lessening smog and traffic congestion. So cities and counties would take the legislation seriously, a portion of the new gasoline tax money was to go directly to cities and counties that complied with a locally adopted Congestion Management Program.

With the passage of AB 2419 (Bowler) in 1996, the Congestion Management Program became optional if the county and cities, representing a majority of the incorporated population, decided to exempt themselves from the Congestion Management Program requirements. Fresno County's Congestion Management Program and the COG's designation as the Congestion Management Agency was rescinded by the COG Policy Board on September 25, 1997, at the request of Fresno County and its fifteen cities.

Air Quality

Air quality is a self-defining term: *the quality of the air that we breathe*. As discussed in Chapter 1 of the 2011 RTP, the San Joaquin Valley faces the serious environmental problem of poor air quality during the majority of the year. National Ambient Air Quality Standards (NAAQS) are established for criteria air pollutants in order to protect human health and welfare. Pursuant to federal law, the Environmental Protection Agency (EPA) has designated the entire San Joaquin Valley Air Basin (SJVAB) a nonattainment area that does not meet established standards for ozone and particulate matter. The San Joaquin Valley is designated as attainment/maintenance for PM10 and carbon monoxide (CO). In addition, the State of California also has set "health protective" standards for air pollutants that are even

more stringent than federal levels. At the state level the SJVAB is designated as nonattainment for ozone and particulate matter.

The following section summarizes the air pollutants that are of major concern in the San Joaquin Valley.

- Ozone

  Ground level ozone is the major component of Fresno County's summertime "smog" and it affects human health and vegetation. Ozone is formed when two chemicals, volatile organic compounds (VOCs) and nitrogen oxides (NOx), interact with sunlight and heat. (VOC is also referred to as reactive organic gases or ROG) Generally, low wind, stagnant air, no clouds, and warm temperatures provide the best conditions for ozone formation; the conditions in San Joaquin Valley are ideal for this reaction. Since the formation of ozone occurs during warmer weather, it is mostly a problem in summer and early fall. Ozone does not form immediately, but occurs over time and distance; therefore, ozone is a regional pollutant and often impacts a large area. VOCs and NOx are emitted from fuel combustion, agricultural processes, and industrial processes, consumer products as well as from natural sources (biogenic sources such as some species of plants and trees).

- Particulate Matter

  The other significant pollutant in the San Joaquin Valley is particulate matter (PM). Particulate matter, commonly called "dust", actually takes several different forms, including tiny pieces of soot, dust, ash, a combination of other chemicals, as well as in liquid form. In addition to directly-emitted particles, "secondary particles" result from gases that are transformed into particles through physical and chemical processes in the atmosphere. These particles can include basic elements such as carbon and metals, or can be complex mixtures such as diesel exhaust and soil.

  In addition to the ozone problem in summer and early fall, the San Joaquin Valley exceeds the standards for particulate matter at other times of the year. The highest levels of particulate matter in Fresno County and the San Joaquin Valley are found in late fall (October) through winter (February). This, in combination with ozone, creates a year-round air pollution problem. This creates an additional concern for human health in our Valley in that we do not have a "clean" season that would allow for respiratory system recovery. The primary sources of particulate matter include farming operations, paved road dust, fugitive dust, unpaved road dust, and waste burning. In addition, residential wood combustion is a significant contributor in urban areas during the winter months, accounting for up to 30% of emissions. Particulate matter is categorized by size: diameters larger than 2.5 microns and smaller than 10 microns is referred to as PM10, smaller particles with diameters 2.5 microns or less are referred to as PM2.5. (As a reference: a human hair is anywhere from about 50 to 100 microns.)

  These finer particles pose an increased health risk, because they can reach deep into the lungs and are associated with both acute and chronic health effects including aggravation of existing respiratory diseases, heart and lung disease, coughing, and bronchitis. Diesel particulate matter is recognized by California's Air Resources Board as a toxic air contaminant based on its ability to cause cancer and other health effects.

- Carbon Monoxide

  Carbon monoxide (CO) is formed by the incomplete combustion of fuels. The main source is motor vehicles. CO has been an air quality problem in the past, but only affected four of the eight Valley counties, including Fresno, Kern, San Joaquin, and Stanislaus. The Fresno/Clovis Metropolitan Area was redesignated to a "maintenance area" when EPA proposed direct, final approval for the *1996 Carbon Monoxide Redesignation Request and*

Maintenance Plan. Currently the San Joaquin Valley is designated as attainment for CO and has an adopted maintenance plan to ensure continued control.

- Air Quality Planning

Based upon the geographical shape of the San Joaquin Valley Air Basin, a regional approach to air quality planning is utilized. Currently, the eight Valley Regional Planning Agencies (RPAs) and the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) have a Memorandum of Understanding (MOU) to ensure a coordinated transportation/air quality planning approach. The MOU defines a cooperative process aimed at maximum effectiveness and compatibility of both air quality and transportation plans. It also facilitates compliance with the air-quality conformity provisions of the federal Clean Air Act. The MOU was updated and adopted by all eight of the Valley RPAs and the SJVUAPCD on September 9, 2009.

A close relationship exists between Transportation Systems Management, Transportation Demand Management, air quality, and energy planning. Transportation Systems Management is the efficient management of existing transportation systems so as to improve upon the level of performance (i.e. traffic flow improvements), while Transportation Demand Management involves planning strategies for managing human behavior regarding how, when, and where people travel. Because Transportation System and Demand Management efforts have secondary benefits, reduction in motor vehicle emissions and in fuel use, they are effective in reducing sources of air pollution from transportation sources.

The Regional Transportation Plan recognizes the importance of state and federal air quality planning regulations. This section summarizes these regulations, and reviews actions to reduce mobile source emissions to a level necessary to contribute to the attainment state and federal air quality standards.

Existing Federal & State Requirements

Transportation Planning as Related to Air Quality / Energy Issues

In September of 1975, the Urban Mass Transportation Administration (now named the Federal Transit Agency) and the Federal Highway Administration issued joint regulations for the development of transportation improvement programs. The regulations called for a short-range, low-capital, multimodal Transportation Systems Management Element to be consistent with the long-range Regional Transportation Plan. The California Legislature also passed statutory requirements (AB 3705, 1988) which mandated the preparation of a separate Transportation Systems Management element for regional transportation planning areas over 50,000 in population.

The Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 redefined the joint regulations and created a new framework for linking air quality, transportation, and land use. It intended a significant shift in federal transportation policy from reliance on roads and motor vehicles to a multimodal approach. ISTEA and its successors TEA-21, SAFETEA-LU and the current Surface Transportation Reauthorization Act delegates major planning decisions to the states and RPAs. They also reinforce the goals of the federal Clean Air Act by making air pollution a central concern of transportation planning and spending decisions.

ISTEA created, and TEA-21, SAFETEA-LU, and the current Surface Transportation Reauthorization Act continue the Congestion Mitigation and Air Quality (CMAQ) Program, which funds transportation projects and related programs that contribute to air quality improvements and provide congestion relief. The goal of the CMAQ Program is to reduce emissions in nonattainment and maintenance areas.

Air Quality Planning

Federal and state legislation requires an integrated transportation/air quality planning process. The Federal Clean Air Act Amendments of 1990 reaffirmed that all areas have to attain the National Ambient Air Quality Standards. Numerous specific reductions of emissions and an aggressive attainment time frame were required. Although the EPA, California ARB and the San Joaquin Valley Unified Air Pollution Control District are responsible for implementing most federal Clean Air Act requirements, the RPAs are responsible for the development and implementation of transportation control measures and compliance with the transportation conformity regulation.

Under certain conditions failure to meet requirements may be met with sanctions. Under the Federal Clean Air Act the EPA is required to impose automatic sanctions. The EPA can apply two sanctions:

1. Offset Sanctions: Establishment of a 2 to 1 emission offset ratio requirement for new stationary sources.

2. Highway Sanctions: A restriction on federally funded highway projects, plans and programs.

The first sanction could make most industrial expansion prohibitively expensive in the Valley while the second sanction could delay needed highway improvements and jeopardize economic growth and jobs.

If the above sanctions are not resolved in a timely manner, the EPA would also be required to file a Federal Implementation Plan (FIP) which would detail how the region will reduce emissions to reach attainment, effectively taking control away from the state and local air district.

- State Implementation Plan (SIP)

  Federal clean air laws require areas with unhealthy levels of criteria air pollutants to develop plans, known as State Implementation Plans (SIPs). SIPs are comprehensive plans that detail how an area will attain national Ambient Air Quality Standards (NAAQS). SIPs are not single documents, but a compilation of new and previously submitted plans, programs, district rules, state regulations and federal controls. .

  As previously mentioned, the San Joaquin Valley Air Basin does not meet air quality standards for ozone and particulate matter. As such, the San Joaquin Valley Unified Air Pollution Control District is required to prepare a SIP to address each air pollutant.

  - 2007 Ozone Plan
    - The District approved the *2007 Ozone Plan* on April 30, 2007. This plan included an in-depth analysis of all possible control measures and projected that the Valley will achieve the 8-hour ozone standard (as set by EPA in 1997) for all areas of the SJVAB no later than 2023.
    - The ARB approved the *2007 Ozone Plan* on June 14, 2007.
    - EPA published transportation conformity budget adequacy determination on January 22, 2009.

  - 2007 PM 10 Plan
    - The District has compiled a series of PM10 Plans, with the first one in 1991. Based on PM10 measurements from 2003-2006, EPA found that the SJVAB had reached the federal PM10 standard.
    - The District's *2007 PM10 Maintenance Plan and Request for Redesignation,* approved on September 21, 2007, assures that the Valley will continue to meet the PM10 standard and requests that EPA formally redesignate, or label, the Valley to attainment status.
    - On September 25, 2008, EPA redesignated the SJV to attainment for the PM10 standard and approved the Maintenance Plan.

- 2008 PM 2.5 Plan
  - The District approved the *2008 PM2.5 Plan* on April 30, 2008. Building upon the strategy used in the *2007 Ozone Plan,* the District agreed to additional control measures to reduce directly produced PM2.5. The *2008 PM2.5 Plan* estimates that the SJVAB will reach the PM2.5 standard (as set by EPA in 1997) in 2014.
  - The ARB approved the Plan on May 22, 2008, and the plan has been submitted to EPA.

- 1996 Carbon Monoxide Redesignation Request and Maintenance Plan
  - California's Air Resources Board submitted a redesignation request to EPA in July of 1996 on behalf of Fresno County and nine other areas in the state to reclassify the areas to maintenance status for carbon monoxide. EPA approved the 1996 Carbon Monoxide Redesignation Request and Maintenance Plan in March 1998. The Plan included contingency provisions made up of measures that were already adopted such as California reformulated fuel, enhanced vehicle inspection and maintenance (Smog Check II), and low-emission new vehicle standards. Additionally, the Plan contains the CO emission budget to which we show conformity in the transportation conformity determination for this RTP.

Accomplishments

The major accomplishments made toward improving local air quality since adoption of the 2007 RTP include the following measures:

- Regional Transportation / Air Quality Planning

  The eight Valley Regional Planning Agencies (RPAs) continue through a Memorandum of Understanding (MOU) to ensure coordinated transportation/air quality planning activities. The MOU defines a cooperative process aimed at maximum effectiveness in meeting state and federal air quality standards. This MOU between and among the eight RPAs was revised and adopted by all eight RPAs on September 21, 2006.

  Interagency consultation is generally conducted through the San Joaquin Valley Model Coordinating Committee (MCC). The MCC was formally revised in 2009 incorporating quarterly workshops, RPA staff conference calls, and interagency conference calls. This committee is now called the San Joaquin Valley COG Director's Association Interagency Consultation Group (IAC). The IAC has been established by the Regional Planning Agency's Director's Association to provide a coordinated approach to valley air quality, conformity and transportation modeling issues. The committee's goal is to ensure Valleywide coordination, communication and compliance with Federal and state Clean Air Act requirements. Each of the eight Valley Regional Planning Agencies (RPAs) and the San Joaquin Valley Unified Air Pollution Control District are represented. In addition, the Federal Highway Administration, Federal Transit Administration, the Environmental Protection Agency, the California Air Resources Board and Caltrans are all members of the committee.

- Valleywide Air Quality Coordination

  In November 1995, the eight Valley RTPAs jointly contracted for the services of an air quality consultant to assist and advise them regarding air quality and modeling regulations. This contract has been renewed since then, and continues today.

- Regional Transportation/Air Quality Plans and Programs

  The Valley RPAs have continued their involvement and contribution to the San Joaquin Valley Unified Air Pollution Control District's State Implementation Plans. The Valley RPAs continue to work in concert with SJVUAPCD providing updates and information.

- Transportation Modeling for Air Quality Conformity

  The Valley Regional Planning Agencies have developed a coordinated effort for transportation modeling for air quality conformity purposes. The objective is to satisfy air-quality conformity requirements from a Valley-wide perspective, and as well as from individual county data. A staff level committee of the Valley RPA Directors, Interagency Coordination Group and the Statewide Air Quality Conformity Working Group meets regularly (three to four times per year) to discuss issues of concern regarding transportation and air quality planning in the Valley.

- Traffic Flow Improvements

  Fresno COG member agencies identify facilities, which require traffic flow improvements. If requested, Fresno COG modeling staff assists in the identification of congested facilities by providing current and future years' traffic forecasts from the traffic model. Numerous traffic flow improvements resulting in air-pollution emission reductions in member jurisdictions have been funded under the Congestion Mitigation and Air Quality Improvement Program.

- Rideshare Program

  Trip reduction services provided by ValleyRides.com primarily assists two segments of the region it serves: employer worksites and individual commuters. Services include consultation, worksite program development, and carpool matching.

Needs Assessment

Management of the transportation system is becoming an increasingly important need in Fresno County. Current air quality issues are driving this need, but energy consumption and maximizing the utilization of existing facilities are also important. Funding for developing new capacity-increasing projects is constrained; even the construction of Measure "C" projects will not satisfy the long-term travel demand within the Fresno/Clovis Metropolitan Area. Therefore, the Fresno region will be looking to demand management measures as means of maintaining accessibility, reducing congestion, and reducing air pollution in order to enhance capacity and meet ambient air quality standards.

Previous efforts have been regional or generalized in terms of analysis and recommendations. This focus will likely shift to more specific corridor analysis where management action is needed and can be developed. This is especially true in regards to federal legislation that requires consideration of alternate transportation modes, the cost/effectiveness of such modes, and potential environmental impacts associated with each mode.

Modeling activities continue to indicate a strong demand for east-west travel in the northern portion of the Fresno/Clovis Metropolitan Area. Therefore, the Fresno COG managed a series of studies to investigate alternatives. In conjunction with Madera County, Fresno COG completed a Phase I analysis of east-west corridor alternatives between Avenue 18 1/2 in Madera County and Herndon Avenue in Fresno County. A Phase II analysis identified the most appropriate crossing of the San Joaquin River.

In addition, Fresno COG served as the lead-planning agency for the Herndon Avenue Specific Study. This study's purpose was to analyze future travel demand in the northern Fresno Clovis metropolitan area and determine the appropriate type of transportation improvements beyond those already planned that would be needed on Herndon Avenue in order to accommodate projected population growth and resultant vehicle trips.

Growth in vehicle miles traveled (VMT) continues to outpace growth in population. Large increases in the percent growth in vehicle miles traveled will continue to challenge our ability to demonstrate air quality conformity. Failure to provide for sufficient mobile source reductions (i.e., vehicle emissions) through transportation strategies may result in more stringent regulations.

Proposed Actions

Short-Range Improvement Plan

- Air Quality Measures

  The Short-Range Improvement Plan provides actions that will reduce air emissions between 2010 and 2014. As indicated in the Needs Assessment section of this chapter, the majority of short-term measures improving air quality are related to system, demand, and control management strategies. Local governments, Fresno COG, and other regional, state, and federal agencies should take the following actions to facilitate the implementation of strategies necessary to ensure that air quality standards are met:

  - Fresno COG will continue to cooperate with the other seven Valley transportation planning agencies and the Air District in providing coordinated transportation/air quality planning.
  - Fresno COG and the Air District will continue to cooperate/consult in activities aimed at achieving air quality standards.
  - Identified Transportation Demand and Control Measures shall be considered and carried out where appropriate by designated responsible governments and agencies.
  - Fresno COG in cooperation with the cities of Fresno and Clovis and Fresno County will continue to evaluate the Fresno/Clovis Metropolitan Area circulation system. Planning efforts require closer evaluation of over-capacity traffic corridors and improved monitoring of the streets and road system. This evaluation will be accomplished through focused corridor analysis, using those corridors as identified in adopted General Plans.
  - Fresno COG, through ValleyRides.com, will encourage individuals and employers to increase average ridership per vehicle by matching those who are interested in carpooling or vanpooling based on home and work/school locations and schedules.
  - Fresno COG will continue to support the efforts of the Air District to integrate appropriate policies and implementation measures identified in the Air Quality Guidelines for General Plans into local general plans.
  - Fresno COG, Fresno County and its fifteen cities will encourage land use patterns which reduce dependency on the automobile, reduce energy consumption, and support the use of transit and other alternative modes.
  - Fresno COG will encourage local transit agencies to explore the use of alternative fueled buses.
  - Fresno COG will support state and federal legislation mandating increased vehicle efficiency in vehicle miles per gallon and other transportation energy conserving legislation.
  - Fresno COG and local transit agencies will support greater flexibility from funding sources for bus purchases in order to promote selection of the most energy-efficient models.
  - Caltrans in cooperation with Fresno COG can promote the development of high-occupancy vehicle lanes, park-and-ride lots, and parking management strategies where appropriate.
  - Fresno COG, Caltrans, cities, and the county can support utilization of alternate fuel strategies.

The introduction of technology into the consumer market can have a significant impact on fuel consumption. Hybrid technology, which combines electrical and gasoline engines, increases fuel efficiency and gas mileage of many automobiles, and is generally less polluting than conventional gasoline vehicles. Improvements to the fuel economy of the fleet can also reduce dependence on gasoline and other fuel sources. Several automakers have released and are planning to release hybrid automobile and truck models in the coming years. While initially more expensive than their gasoline-only counterparts, the costs would be expected to decline as the availability of these vehicles increases.

Many city fleets and bus fleets are also converting to natural gas and other alternative fuel vehicles, which are cleaner burning fuels that can reduce pollution and provide an option to gasoline-only vehicles. While these are not typically available to individual consumers, natural gas models should be available in coming years. Still many few years down the road, research on implementing hydrogen fuel cell technology could produce "zero-emission" vehicles for retail sale in the long-term.

Long-Range Plan

Long-range actions are those that will be implemented within a 20-year period. They depend upon the effectiveness of the short-range programs, upon federal and state air quality policies and mandates, and upon available funding. Long-term strategies are those that will take many years to accomplish because they are often aimed at changing human attitudes and behavior towards the use of new and alternate transportation systems and fuels. The goals, objectives, and policies for air quality attainment and energy conservation stress concerted efforts toward supporting alternative transportation modes including improvement of bicycle and pedestrian systems and upgrading existing public transit and rail facilities. The long-range strategies will continue to focus upon Transportation Control Measures, Transportation System Management and Transportation Demand Management.

Other long-term strategies stress utilizing existing transportation and energy resources more efficiently. Nationwide, transportation planners have come to realize that increasing the "supply" of the transportation system (i.e. building and widening highways and roads) does not alone solve complex transportation problems. With increasingly scarce resources and growing environmental concerns, it will become necessary that we use our existing transportation network more efficiently. This entails changing the "demand" for the transportation system: how we get to and from our destinations, what time we travel, whether we link trips, and how often we drive by ourselves in single occupant vehicles.

The "key" to acceptance of long-range strategies involves a commitment to public education by local, regional, state, and federal governments. Even the best transportation alternatives will have a difficult time competing with the perceived benefits of the private automobile. Incentives are necessary to overcome these built-in advantages and to make other types of travel just as economically appealing as driving alone. Examples include subsidized bus and rail passes; preferential, free, or subsidized parking for carpoolers; and subsidized vanpools. State and federal governments need to continue assisting local governments in providing funding sources to implement such strategies.

Equally important in this educational effort is that cities, the county, Caltrans, and public service and utility districts address transportation/air quality concerns in their long-range plans and programs. Long-range planning strategies that call for mixed land uses, creation of higher density nodes to be supported by public transit systems, and comprehensive bikeway and pedestrian plans are necessary, if alternate transportation systems are to be successful and energy resources conserved.

Climate Change

Greenhouse gases are gases that absorb and emit thermal, infrared radiation trapping heat in the earth's atmosphere and are currently not considered "criteria" air pollutants. There are no "attainment" concentration standards established by the federal or State government for greenhouse gases. Since they are not, at this point, criteria air pollutants they are not subject to regulation by the EPA, ARB, or local air districts. In fact, greenhouse gases are not generally thought of as traditional air pollutants because greenhouse gases, and their impacts, are global in nature, while traditional, criteria air pollutants are those that affect the health of people, and other living things, at ground level and in the general region of their release into the atmosphere. However, there is action at the federal level that is moving toward consideration of greenhouse gases as criteria pollutants. In fact, the U.S. EPA made a very significant finding on December 15, 2009 that greenhouse gases endanger public health and that the combined emissions from new motor vehicles and new motor vehicle engines endanger public health and welfare. This important finding moves the control of greenhouse gas emissions toward regulation; like the traditional air pollutants. Until formal determination of the intent to regulate greenhouse gas under the federal Clean Air Act is made, federal and California legislation is the primary means being implemented to reduce greenhouse gas levels. Common greenhouse gases include water vapor, carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), ozone (O_3), and chlorofluorocarbons (CFCs).

Some greenhouse gases occur naturally and are emitted to the atmosphere through both natural processes and human activities. Other greenhouse gases are created and emitted solely through human activities. The principal greenhouse gases that enter the atmosphere because of human activities are CO_2, CH_4, N_2O, and fluorinated carbons.

- Carbon Dioxide – CO_2 enters the atmosphere through the burning of fossil fuels, solid waste, trees and wood products. CO_2 is also as a result of other chemical reactions (e.g., certain manufacturing processes). CO_2 is removed from the atmosphere through the photosynthesis process (the process in which plants absorb and convert CO_2 into energy).

- Methane – CH_4 is emitted during the production and transport of coal, natural gas, and oil. CH_4 is also the natural result of the ruminant digestive processes in livestock and other agricultural practices and by the decay of organic waste.

- Nitrous Oxide – N_2O is emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste.

- Fluorinated Gases – Hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride are synthetic gases that are emitted from a variety of industrial processes. These gases are typically emitted in smaller quantities, but because of their potency, they are sometimes referred to as High Global Warming Potential gases (High GWP gases).

Detailed discussions of greenhouse gases and current state and federal regulations, and links to other greenhouse gas resources can be found on the SJVAPCD's website at: http://www.valleyair.org/ Programs/CCAP/CCAP_idx.htm and in Chapter 5 of the 2011 RTP. In addition, a list of achievements and challenges related to climate change is provided in Chapter 5 of the 2011 RTP.

Legislation regarding the State of California's efforts to reduce greenhouse gases has had a direct impact on many elements of Fresno COG's Resolution to Incorporate/Adopt Greenhouse Gas Policies. The *Climate Change Element* for the 2011 RTP implements the resolution; and at the same time provides the first phase toward the reduction of greenhouse gas emissions. Fresno COG will be adopting this 2011 RTP before the final SB 375 emission reduction

targets are determined. Therefore, this *Climate Change Element* is the first phase in Fresno COG's approach to address the issue of global climate change. (The next RTP update will occur in 2014-when actual SB 375 regional targets will be available)

The 2011 RTP meets the requirements of AB 32: *The Global Warming Solutions Act of 2006*. The second phase of our approach to address climate change will occur in the 2014 RTP update cycle. As such, this *Climate Change Element* Chapter is transitional work toward the next RTP cycle which will include either a "Sustainable Communities Strategy" in the 2014 RTP or Fresno COG will incorporate an "Alternative Planning Strategy", in order to be fully compliant with SB 375. Subsequent RTP cycles will evaluate the progress of the adopted strategies and make modifications as necessary.

The Fresno region will continue proactive efforts to reduce greenhouse gas emissions; however the only way to truly address global warming is through the cooperative and collaborative efforts of international agreements, federal, State, as well as local efforts.

Financial Element

As required by federal transportation legislation, the Financial Element of Fresno COG's 20011 Regional Transportation Plan (RTP) is intended to provide the cost and revenue assumptions necessary for decision makers to implement the RTP. These assumptions include revenue estimates for specific governmental funding programs, local contributions and tax initiatives. The intent of the financial assumptions is to provide a level of financial detail adequate for options to be exercised by state and local decision makers. The following is a brief summation of the components of the Financial Element:

- Provides an estimation of the costs and a projection of the revenues available for transportation system improvements recommended in the Action Element of the RTP. In doing so, it contains financial assumptions and projections that set parameters for the Regional Transportation Improvement Program (RTIP).

- The incorporation of a Financial Element in the RTP allows the RTP to be financially constrained as required by federal legislation. Federal statutes state that a financial plan must be included that demonstrates how the projects can be implemented while the existing transportation system is being maintained.

- Serves as an inventory of existing and potential new transportation funding sources that can be used for transportation system improvements that are most appropriate for implementation in Fresno County. It also identifies potential funding shortfalls along with recommendations for the development of new sources of needed revenue.

- Includes a financially constrained list of projects for which funding has been identified or is reasonably expected to be available within the RTP planning horizon. Also included is a list of projects (financially unconstrained) which are both necessary and desirable should funding become reasonably available.

The financial chapter of the 2011 RTP covers the following areas: financial assumptions, unmet financial needs (urban & rural), existing major revenue sources, long-range financial projections, and potential new revenue sources.

Table 2-3 provides a listing of all of the federal, state and local transportation funding programs and their projected revenues on three different levels, an average annual projection, a short-term projection (10 years) and a long term projection (25 years) covering the life of the plan. In total, those revenues are anticipated to be approximately $5.17 billion and are identified in a summary manner in Table 2-2.

TABLE 2-2
Total RTP Revenues (2010 thru 2035)

Funding Source	Life of RTP (24 Year)
Federal	$1,673,502,213
State	$2,288,127,319
Local	$1,848,128,145
Total Revenue (All Sources)	$5,809,757,678

Public Involvement

Public involvement in transportation planning has always been an integral part of the overall transportation planning process. A public involvement process is also called for in the Joint Powers Agreement that the Council of Fresno County Governments (Fresno COG) has with its member agencies. However, since the passage of ISTEA, a significant emphasis has been placed on public involvement efforts. Federal regulations to implement ISTEA, TEA-21 and SAFETEA-LU call for comprehensive proactive Public Participation Plans which respond not only to federal transportation legislation but also those of related federal acts, such as the Clean Air Act and the Americans with Disabilities Act (ADA).

In keeping with the intent of SAFETEA-LU, Fresno COG is committed to a Public Participation Plan which enhances the role of citizens and interest groups in a manner designed to include early, open, and meaningful involvement in the development of plans from the beginning of the process to its end. Fresno COG, in keeping with this commitment, adopted Public Participation Plan (PPP) in November 2007 with minor updates made to it in 2009. The 2007 RTP includes additional outreach to comply with requirements of SAFETEA-LU legislation. Appendix C includes the SAFETEA-LU Gap Analysis, which indicates that Fresno COG will update the Public Involvement Procedures in 2007. This is part of a commitment for regular updates and review of the procedures, as well as an opportunity to incorporate any additional issues identified in SAFETEA-LU.

In addition, Fresno COG developed a stand alone Regional Transportation Public Outreach Plan for the 2011 Update Process. A copy of that POP is provided in Chapter 7 of the 2011 RTP.

2.5 RELATIONSHIP TO OTHER PLANS AND PROGRAMS

The RTP is a planning guide containing transportation policy and projects through Fiscal Year 2034/35). The Plan includes programs and policies for transportation management, transit, bicycles and pedestrians, roadways, passenger rail, 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, Fresno County, and each of the cities within the County. RTPs are planning documents developed by 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 Fresno County 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 facilitating partnerships that reconcile transportation issues which transcend regional boundaries.
- Involvement of the public, federal, state and local agencies, as well as local elected officials early in the transportation planning process so as to include them in discussions and decisions on the social, economic, air quality, and environmental issues related to transportation.

Further, the RTP addresses the effects of planned growth and development on the existing and planned transportation system. The resultant analysis documents existing and future year (Year 2035) multimodal transportation system conditions. Modes studied include highways and arterials, public transit, nonmotorized systems, passenger and freight rail, and aviation. The analysis conducted as part of this EIR considers the effects of projects and programs outlined in the 2011 RTP.

2.6 EIR AND REGIONAL TRANSPORTATION PLAN APPROVAL PROCESS

The process to approve the RTP and associated EIR includes (1) assessing Fresno County's transportation needs, identifying RTP projects to address the needs, and addressing air quality conformity requirements in the Draft and Final EIR; (2) seeking comments on the EIR and approval of the RTP from the local agencies including the County and each of the fifteen (15) cities; (3) approval of resolutions passed by Fresno COG certifying the EIR and approving the RTP, and (4) approval of a resolution passed by Fresno COG approving the RTP. Public involvement will be encouraged throughout the process.

2.7 CONTENTS OF THE RTP

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 sixteen member jurisdictions of Fresno COG.

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 consists of required elements referenced in the enabling legislation and is organized into various sections. A description of each section follows.

- Chapter 1. San Joaquin Valley Regional Transportation Overview
- Chapter 2. Regional Setting, State and Federal Issues
- Chapter 3. Policy Element

- Chapter 4. Needs Assessment and Action Element
- Chapter 5. Climate Change
- Chapter 6. Financial Element
- Chapter 7. Public Outreach
- Appendices.

2.8 INTENDED EIR USES

As a Program EIR, which is a type of first-tier document (CEQA Guidelines Sec. 15152, 15168), 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 should use 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.
- 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 tiering concept is a multi-level approach to streamline subsequent environmental reviews. The first-tier Program EIR is an analysis of general matters (i.e., in this case – projects contained in the RTP and related impacts). 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 improvement projects that implement the Plan, program, or policy.

The environmental areas addressed in this Draft EIR were identified from the Notice of Preparation (NOP), 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.

Fresno COG, Fresno County, the cities, Caltrans, and other responsible and trustee agencies will use this EIR[1] for:

- Regional Transportation Plan Updates
- Transportation Improvement Programs
- Grants and other funding source projects
- Project Study Reports
- Design Studies

[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).

- 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 Transportation Demand Management (TDM) and Intelligent Transportation Systems (ITS) Improvement Projects
- General Plan Amendments
- Review of transportation and land use development projects
- Capital Improvement Program budgeting and project priorities
- Encroachment Permits

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

- California Dept. of Fish and Game -- *Improvement projects involving Stream Alteration Permits and California Endangered Species Act*
- California Dept. of Transportation -- *Local Assistance Projects, Transportation Improvement Program, and development permits/encroachment permits on State highways*
- Cities -- *regional transportation planning, Capital Improvement Program budgeting and project priorities, review of transportation and land use development projects, General Plan Amendments, and encroachment permits*
- Fresno County (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*
- Local water departments, Districts and regional irrigation districts/companies -- *Improvement projects involving waterway crossings, channel re-alignments, piping, etc.*
- San Joaquin Valley Air Pollution Control District (SJVAPCD) -- *air quality attainment plan consistency and air quality mitigation measures for improvement projects*
- Council of Fresno County Governments (Fresno COG) -- *Development of the Regional Transportation Improvement Program and other regional transportation planning documents*
- Fresno County Transportation Authority -- *Development and implementation of the Expenditure Plan*
- School Districts -- *Improvement projects adjacent to or in the vicinity of 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 and subsequent improvement projects funding and U.S. Endangered Species Act*
- Economic Development Commission -- *Strategic Plan development, identification of infrastructure and road improvements*

2.9 APPROVALS REQUIRED TO IMPLEMENT THE PROJECT

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

2.10 EIR DEVELOPMENT/APPROVAL PROCESS

♦ Draft SEIR submitted to Fresno COG for distribution	April 23, 2010
♦ Draft SEIR Notice of Completion submitted to the State Clearinghouse for distribution to state agencies	April 28, 2010
♦ Availability of Draft SEIR for public review published In local newspapers and on Fresno COG website	April 30, 2010
♦ Draft SEIR available at Fresno County Libraries, and Fresno COG offices	April 30, 2010
♦ Draft SEIR emailed to organizations, agencies and individuals for review and comment	April 30, 2010
♦ Public Workshops on Draft SEIR	May 2010
♦ Draft 45-day public comment period closed	June 15, 2010
♦ Final EIR submitted to Fresno COG for distribution	July 1, 2010
♦ Review of Final EIR by local agencies	July 1-29, 2010
♦ Public Hearing on Final EIR by Fresno COG	July 29, 2010

2.11 ORGANIZATION OF THE EIR

This EIR consists of the following six sections and two appendices. Each one of these begins with an overview of general EIR terminology and/or requirements specific to each of these sections. *These overviews are in italic typeface.*

1.0 Executive Summary
2.0 Introduction/Project Description
3.0 Environmental Setting, Impacts, Mitigation Measures, and Level of Significance
4.0 Project Alternatives
5.0 Long-Term Effects
6.0 List of Preparers, Organization, and Agencies Referenced or Consulted

Appendices

A Notice of Preparation (NOP)
B NOP Comments

Table 2.3 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.

TABLE 2.3
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 & Level of Significance
Effects Not Found to be Significant	Setting, Impacts, Mitigation & Level of Significance
Significant Environmental Impacts *(CEQA Guidelines 15126 & 15126.2)*	Setting, Impacts, Mitigation & Level of Significance
Areas of Known Controversy	Setting, Impacts, Mitigation & Level of Significance
Alternatives *(CEQA Guidelines 15126.6)*	Project Alternatives
Mitigation Measures *(CEQA Guidelines 15126.4)*	Setting, Impacts, Mitigation & 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	List of Preparers and Those Consulted

2.12 EIR AND 2011 RTP AVAILABILITY

The RTP and this environmental review document are available at:

Council of Fresno County Governments (Fresno COG)
2035 Tulare Street, Suite 201
Fresno, CA 93721
www.fresnocog.org

Comments and questions should be made to:

Mr. Clark Thompson, Planner III
Ph: (559) 233-4148
FAX: (559) 233-9654
Email: tboren@fresnocog.org

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 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)*
  - *Particular agency thresholds of significance*

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

  - *Aesthetics*
  - *Agricultural Resources*

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

The NOP also concluded that adoption of the 2011 RTP would result in less than significant impacts on the following environmental issue areas if applicable policies and standards were applied:

- *Recreation*
- *Mineral Resources*

After review of the NOP comments, it was determined that this Subsequent Program EIR should focus on the same environmental issues referenced in the NOP and listed above.

- *Describe feasible mitigation measures, which would minimize significant adverse impacts. Wherever significant adverse impacts have been identified, mitigation measures are recommended to minimize impacts.*
- *Prepare an evaluation of the level of significance of individual impacts assuming implementation of the recommended mitigation measures.*

Based on findings identified in this Section of the SEIR, the preferred Project is the Multi-Modal Project Alternative or projects contained in the 2011 RTP. 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 modes.

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 Fresno County regional transportation system is comparable to other transportation systems in the San Joaquin Valley. The County is relatively flat within the Valley region. The Valley areas are bounded on the east and west by foothill and mountain ranges and are dominated by the agricultural landscape. The majority of cities and communities in Fresno County are located in the Valley area. Valley communities and cities include Biola, Burrel, Calwa, Cantua Creek, Caruthers, Centerville, Clovis, Conejo, Del Rey, Easton, Five Points, Firebaugh, Fowler, Fresno, Helm, Huron, Kerman, Kingsburg, Laton, Malaga, Mendota, Minkler, Navelencia, Orange Cove, Pinedale, Parlier, Raisin, Raisin City, Reedley, Riverdale, Rolinda, San Joaquin, Sanger, Selma, Three Rocks, and Tranquillity.

The Valley areas are met in the east and west by foothill and mountain ranges. Eastern foothill areas generally include gently rolling grass-covered hills sprinkled with oak trees, occasional water features, and rock formations. Agriculture and range animals may or may not be included. Eastern foothill communities include Auberry, Dunlap, Friant, Piedra, Prather, Squaw Valley, and Tollhouse. Western foothill areas are similar to eastern foothills, but are much drier and contain significantly fewer trees. Coalinga is the only community of significance in the western foothill area of Fresno County. Mountain areas in the northeast usually include numerous pine trees, some rock formations and changing elevation. Mountain communities include Big Creek, Dinkey Creek, Hume, Huntington Lake, Lakeshore, Miramonte, Mono Hot Springs, Pinehurst, Pineridge, Shaver Lake, and Trimmer.

Various forms of transportation have affected the aesthetic quality of the County. As a result, the existing and planned multi-modal transportation system is considered to have a significant impact on the aesthetic quality in the County. The aesthetic appearance of the Fresno 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 of the EIR addresses the general aesthetic landscape of the Fresno region and assesses the potential impacts from region-wide construction of at- and above-grade facilities.

Regulatory

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

Federal Highway Administration (FHWA) – National Scenic Byways Program

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

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

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

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

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

National Environmental Policy Act (NEPA)

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

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

In 2005, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) was signed into law. The Act provides guaranteed funding for highways, highway safety, and public transportation totaling $244.1 billion, representing the largest nationwide 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 State Legislature created the California Scenic Highways Program 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 Fresno County, four (4) highways are eligible for designation. The highways are displayed in Figure 3-1 and are listed below.

- Route 33: from Route 198 near Coalinga to Route 198 near Oilfields
- Route 168: from Route 65 near Clovis to Huntington Lake (SR 65 is designated as the limit in the State's database even though it does not exist)
- Route 180: from Route 65 near Minkler to General Grant Grove section of Kings Canyon National Park (SR 65 is designated as the limit in the State's database even though it does not exist)
- Route 198:
  - from Route 101 near San Lucas to Route 33 near Coalinga
  - from Route 33 near Oilfields to I-5

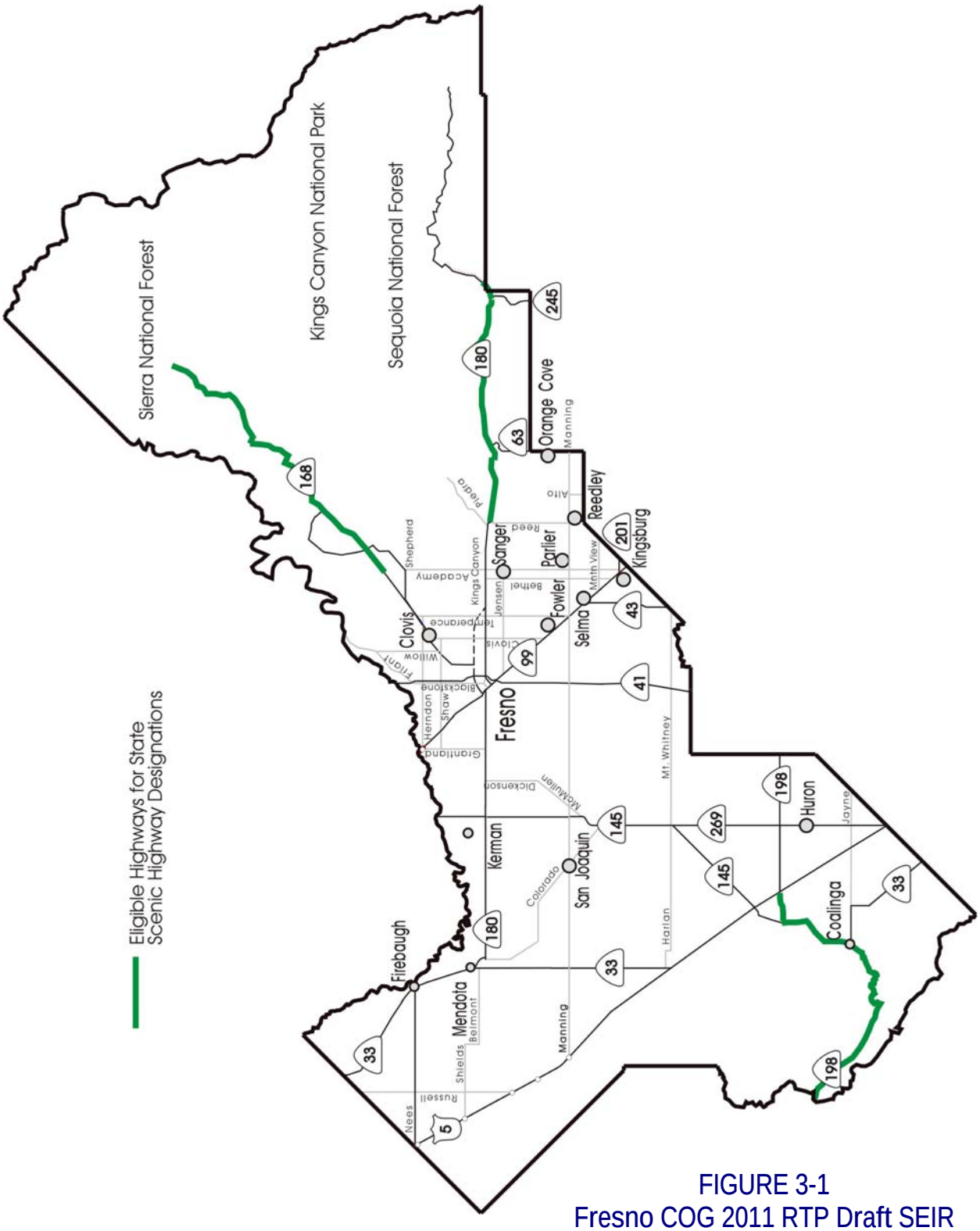


FIGURE 3-1
Fresno COG 2011 RTP Draft SEIR
Eligible Scenic Highways

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 a jurisdiction's General Plan. The value attributed to a visual resource generally is based on the characteristics and distinctiveness of the resource and the number of persons who view it. Vistas of undisturbed natural areas, unique or unusual features forming an important or dominant portion of a view shed, and distant vistas offering relief from less attractive nearby features are often considered 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. A number of intervening elements, including trees and other vegetation, built structures, or topography, such as hills and mountains, can limit the extent of a view shed.
- 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 Fresno 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 Fresno County, there are no uniform standards that apply to all areas of the region.

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 Fresno County, high pollutant emissions – combined with poor natural ventilation in the San Joaquin Valley 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 mixture of climate topography affords the extraordinary range of visual features in the region 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 Fresno County, according to the Caltrans California Scenic Highway Mapping System, there are four (4) highways eligible for designation including State Route (SR) 33, SR 168, SR 180 and SR 198. 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.

The County also has a system of designated scenic highways including two scenic highways, Highway 168 and Highway 180, which extend down from the Sierras and terminate in the Eastside Valley area. In addition, there are several scenic drives that wind their way through the Sierra and Sierra Foothill areas. Due to the continuous unrestrictive views of adjacent coastal foothills, Interstate 5 (I-5) is an officially designated scenic highway[1].

Light and Glare

General sources of light can be categorized as follows:

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

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

Environmental Impacts, Mitigation Measures, and Significance After Mitigation

Potential impacts to scenic resources and vista points were based on available 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 as well as other projects contained in the RTP financially constrained project lists. This analysis also discusses the potential impact of

[1] Fresno County General Plan, 2000

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.
- Is inconsistent with applicable local guidelines and regulations.

Generally, proposed projects are of the following two types:

- New Systems (new highway and transit facilities).
- 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 – Obstruction of Views

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 project-level analysis, as appropriate. The project implementation agency or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to construction. Fresno 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 – Altered Appearance of Scenic Resources

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.
- 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 project-level analysis, as appropriate. The project implementation agency or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to construction. Fresno 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 – Development of Previously Undeveloped Sites with Visual Qualities

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 Measures

All mitigation measures will be included in project-level analysis, as appropriate. The project implementation agency or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to construction. Fresno 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.
- Grading will blend with the adjacent landforms and topography.

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

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

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

Significance After Mitigation

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

Impact 3.1.4 – New Sources of Light and Glare

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 proposed 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. Fresno County includes large and medium 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 Measures

All mitigation measures will be included in project-level analysis, as appropriate. The project implementation agency or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to construction. Fresno 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.
    - 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.

Cumulative Impact 3.1.5

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

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

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

Mitigation Measures

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

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

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

Significance After Mitigation

This impact would remain significant because the population growth projected by 2035 in combination with the projects in the 2011 RTP would consume land that is currently vacant resulting in contrasts with the overall visual character of the existing landscape setting.

3.2 AGRICULTURAL RESOURCES

Fresno County is home to 1.88 million acres of the world's most productive farmland, with agricultural operations covering nearly half of the county's entire land base of 3.84 million acres. Farmers here raise more than 350 different crops, contributing directly more than $5.3 billion to the California economy and supporting 20 percent of all jobs in the Fresno area. Many of the county's crops are not grown commercially anywhere else in the nation. Every $1 generated on the farm produces another $3.50 in the local and regional economy. Near year-round sun and rich, productive soil has kept Fresno the nation's number one agricultural county since 1949.

Regulatory

Federal Agencies and Regulations

- The Environmental Protection Agency (EPA) implements NEPA.

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

- U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS)

  The NRCS maps soils and farmland uses to provide comprehensive information necessary for understanding, managing, conserving and sustaining the nation's limited soil resources. The NRCS manages the Farmland Protection Program, which provides funds to help purchase development rights to keep productive farmland in agricultural uses.

- United States Bureau of Land Management (BLM)

  The California Desert Conservation Area Plan is used to manage BLM controlled areas. The BLM also implements biological resource management policies through its designation of Areas of Critical Environmental Concern.

- United States Fish and Wildlife Service (USFWS)

  The USFWS administers the Federal Endangered Species Act (FESA) and designates critical habitat for endangered species. The USFWS also manages the National Wildlife Refuges

- United States Army Corps of Engineers (USACE)

  Among its responsibilities, the USACE administers Section 404 of the Clean Water Act (CWA), which governs specified activities in waters of the United States, including wetlands. In this role, the USACE requires that a permit be obtained if a project would place structures, including dredged or filled materials, within navigable waters or wetlands, or result in alteration of such areas.

- Federal Farm and Ranchland Protection Program (FRPP)

  The FRPP, also referred to as the Farmland Protection Program (FPP), is a voluntary easement purchase program that helps farmers and ranchers keep their land in agriculture. Pursuant to the Farmland Protection Policy Act (FPPA) of 1981 Sections 1539-1549, the Secretary of Agriculture is directed to establish and carry out a program to "minimize the extent to which Federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses, and to the extent practicable, will be compatible with state, unit of local government, and private programs and policies to protect farmland." (7 USC 4201-4209 & 7 USC 658).

  The program provides matching funds to state, tribal, or local governments and nongovernmental organizations with existing farmland protection programs to purchase conservation easements or other interests in land. FPP is reauthorized in the Farm Security and Rural Investment Act of 2002 (Farm Bill). The NRCS manages the program. Technical Committee, awards funds to qualified entities to conduct their farmland protection programs. Although a minimum of 30 years is required for conservation easements, priority is given to applications with perpetual easements.

- Federal Environmental Quality Incentives Program (EQIP)

  EQIP is a voluntary program that provides assistance to farmers and ranchers who face threats to soil, water, air, and related natural resources on their land.

State Agencies and Regulations

- California Department of Conservation

  In 1982, the State of California created the Farmland Mapping and Monitoring Program within the California Department of Conservation to carry on the mapping activity from the NRCS on a continuing basis. The California Department of Conservation administers the California Land Conservation Act of 1965, also known as the Williamson Act, for the conservation of farmland and other resource-oriented laws.

- California Department of Transportation (Caltrans)

  The Caltrans jurisdiction includes right-of-ways of state and interstate routes within California. Any work within the right-of-way of a federal or state transportation corridor is subject to Caltrans regulations governing allowable actions and modifications to the right-of-way. Caltrans includes the Division of Aeronautics, which is responsible for airport permitting and establishing a county Airport Land Use Commission (ALUC) for each county with one or more public airports. ALUCs are responsible for the preparation of land use plans for areas near aviation facilities.

- California Department of Forestry and Fire Protection (CDF)

  The CDF reviews and approves plans for timber harvesting on private lands. In addition, through its responsibility for fighting wildland fires, the CDF plays a role in planning development in forested areas.

- California Department of Parks and Recreation (CDPR)

  The CDPR manages and provides sites for a variety of recreational and outdoor activities. The CDPR is a trustee agency that owns and operates all state parks and participates in land use planning that affects state parkland.

- California Department of Fish and Game (CDFG)

  The land use mandate of the CDFG is to protect rare, threatened, and endangered species by managing habitat in legally designated ecological reserves or wildlife areas.

Public Agencies

Public agencies are entrusted with compliance with CEQA and its provisions are enforced, as necessary, through litigation and the threat thereof. CEQA defines a significant effect on the environment as a substantial, or potentially substantial, adverse change in the physical conditions within the area affected by the project. Land use is a required impact assessment category under CEQA.

- California Land Conservation Act of 1965 (Williamson Act)

  The Williamson Act is the only established program that directly involves state government in an administrative or fiscal capacity. The Act creates an arrangement (contract) whereby private landowners voluntarily restrict their land to agricultural and compatible open space uses under a rolling ten-year contract. In return parcels are assessed for property tax purpose at a rate consistent with their actual use, rather than potential market value.

- Farmland Security Zone: August of 1998, the Legislature enhanced the Williamson Act with the farmland security zone (FSZ) provisions. The FSZ provisions offer landowners greater property tax reduction in return for a minimum rolling contract term of 20 years.

- California Farmland Conservancy Program

  The CFCP seeks to encourage the long-term, private stewardship of agricultural lands through the voluntary use of agricultural conservation easements. The CFCP provides grant funding for projects which use and support agricultural conservation easements for protection of agricultural lands. As of April 2005, the CFCP has funded more than 50 easement projects in California, including nearly 25,000 acres in more than a dozen counties. CFCP has also funded a number of planning grants, including some with regional or statewide value. Within the eight-county study area, CFCP has awarded grants for planning and policy projects within the counties of Kern and Ventura.

Local Agencies and Regulations

- Land Conservation Trust

  Land conservation trust is another type of organization devoted to protecting open space, agricultural lands, wildlife habitats, and natural resource lands. A land trust is a nonprofit organization that, as all or part of its mission, actively works to conserve land by undertaking or assisting in land or conservation easement acquisition, or by its stewardship of such land or easements. There are approximately 80 established trusts in California. Local and regional land trusts, organized as charitable organizations under federal tax laws, are directly involved in conserving land for its natural, recreational, scenic, historical and productive values.

- Local Agency Formation Commissions

  The local agency formation commission (LAFCO) is the agency that has the responsibility to create orderly local government boundaries, with the goal of encouraging "planned, well-ordered, efficient urban development patterns," the preservation of open-space lands, and the discouragement of urban sprawl. While LAFCO has no

direct land use authority, its actions determine which local government will be responsible for planning new areas. LAFCO addresses a wide range of boundary actions, including creation of spheres of influence for cities, adjustments to boundaries of special districts, annexations, incorporations, detachments of areas from cities, and dissolution of cities.

- General Plans

  The most comprehensive land use planning in the Fresno 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

Fresno County is located in the center of California's San Joaquin Valley, the richest agricultural area in the world. The County is home to 1.88 million acres of the world's most productive farmland, with agricultural operations covering nearly half of the County's entire land base of 3.84 million acres. Over six thousand (6,000) farmers grow more than 350 different crops, contributing more than $5.3 billion a year to the California economy and supporting 20 percent of all jobs in the Fresno area. Many of the County's crops are not grown commercially anywhere else in the nation. Based on the 2007 USDA Census of Agriculture, Fresno County leads the state in the following categories:

- Highest number of farms - 6,081 with 1.6 million farm acres
- Harvested cropland - 978,948 acres (Fresno County is 2nd in the nation for total cropland, with 1.25 million acres)
- Farms with sales of 100,000 or more - 2,041farms
- Irrigated land - 984,455 million acres

Despite the low precipitation in the area, and the County's dependence upon the availability of irrigation water, agriculture remains one of the primary industries in the County, with much of the level and moderately sloping land used for the production of agricultural crops. The foothills and mountain areas are used for livestock grazing. In

2008, Fresno County's 10 leading crops included: grapes, almonds, poultry, milk, tomatoes, cattle and calves, peaches, oranges, garlic and nectarines. These crops had value of $3.7 million.

Williamson Act Lands

Fresno County currently contains over 1.5 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 Fresno County.

TABLE 3-1
Lands Enrolled in Williamson Act Preserve, 2007

		Acres
Land Conservation Act	Prime	985,729
	Non-prime	485,480
Farmland Security Zone	Urban Prime	-
	Non-urban Prime	25,612
	Non-urban Non-prime	3,482
Total		1,500,303

Source: Division of Land Resource Protection, Williamson Act Status Report 2008, Appendix C

The Fresno County 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 - Changes in Land Use Patterns

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 RTP. 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. Fresno 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 – Loss of Agricultural Land

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

The Fresno 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 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. Fresno 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, project 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

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.

3.3 AIR QUALITY

Fresno County is located in one of the most polluted air basins in the country. 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 Fresno 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, Fresno and Clovis experience 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 Fresno 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 Fresno 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 (PM10), 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 San Joaquin Valley Air Pollution Control District (SJVAPCD) Board. The SJVAPCD for purposes of this EIR is referred to as the "Air District". Fresno 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 individual improvement 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.

Fresno County is in the CARB-designated, SJVAB. A map of the SJVAB is provided in Figure 3-2. In addition to Fresno County, the SJVAB includes San Joaquin, Kern, Kings, Madera, Merced, Stanislaus, and Tulare Counties.

Applicable federal and State standards are provided in Table 3-2.

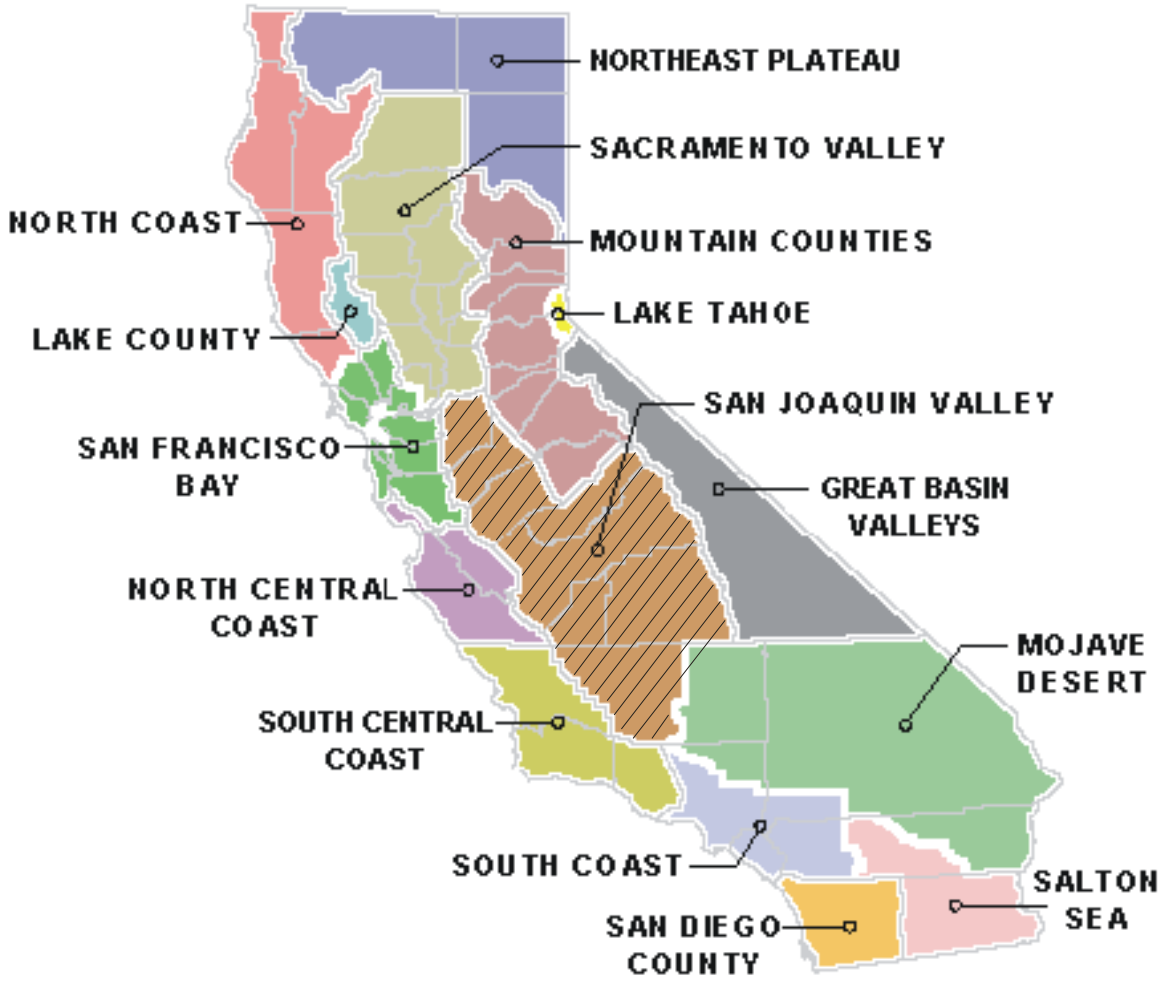


FIGURE 3-2
Fresno COG 2011 RTP Draft SEIR
California Air Basins

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)		0.075 ppm (147 µg/m^3)		
Respirable Particulate Matter (PM10)	24 Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		—		
Fine Particulate Matter (PM2.5)	24 Hour	No Separate State Standard		35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	15.0 µg/m^3		
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m^3)	None	Non-Dispersive Infrared Photometry (NDIR)
	1 Hour	20 ppm (23 mg/m^3)		35 ppm (40 mg/m^3)		
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		—	—	—
Nitrogen Dioxide (NO_2)[8]	Annual Arithmetic Mean	0.030 ppm (57 µg/m3)	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m^3)	Same as Primary Standard	Gas Phase Chemiluminescence
	1 Hour	0.18 ppm (339 µg/m^3)		0.100 ppm	0.053 ppm (100 µg/m^3)	
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	—	Ultraviolet Fluorescence	0.030 ppm (80 µg/m^3)	—	Spectrophotometry (Pararosaniline Method)
	24 Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (365 µg/m^3)	—	
	3 Hour	—		—	0.5 ppm (1300 µg/m^3)	
	1 Hour	0.25 ppm (655 µg/m^3)		—	—	—
Lead[9]	30 Day Average	1.5 µg/m^3	Atomic Absorption	—	—	—
	Calendar Quarter	—		1.5 µg/m^3	Same as Primary Standard	High Volume Sampler and Atomic Absorption
	Rolling 3-Month Average[10]	—		0.15 µg/m^3		
Visibility Reducing Particles	8 Hour	Extinction coefficient of 0.23 per kilometer — visibility of ten miles or more (0.07 — 30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape.		No Federal Standards		
Sulfates	24 Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride[9]	24 Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

See footnotes on next page …

For more information please call ARB-PIO at (916) 322-2990 — California Air Resources Board (01/27/10)

Footnotes:

1. *California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter—PM10, PM2.5, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.*
2. *National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m3 is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact U.S. EPA for further clarification and current federal policies.*
3. *Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.*
4. *Any equivalent procedure which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.*
5. *National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.*
6. *National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.*
7. *Reference method as described by the EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the EPA.*
8. *To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010).*
9. *The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.*
10. *National lead standard, rolling 3-month average: final rule signed October 15, 2008.*

Regional Agencies

- San Joaquin Valley Air Pollution Control District

The Air District is the agency responsible for monitoring and regulating air pollutant emissions from stationary, area, and indirect sources within Fresno County and throughout the SJVAB. The Air 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 Air 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. There are eight (8) air quality-monitoring sites located throughout Fresno County including:

- Clovis-N Villa Avenue
- Fresno-1st Street
- Fresno-Drummond Street
- Fresno-Fremont School

- Fresno-Sierra Skypark
- Fresno-Mobile
- Parlier
- Shaver Lake-Perimeter Road

Tables 3-3 and 3-4 contain the ambient air quality classifications for a monitoring site in Fresno and a site in the rural area. Table 3-5 identifies the District attainment status. As indicated, the Valley 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 Fresno's First Street Monitoring Station

Pollutant	Time Averaging	2006 Maximums	2007 Maximums	2008 Maximums	Standards National	Standards State
Ozone (O_3)	1 hour	0.138 ppm	0.119 ppm	0.157 ppm	-	0.09 ppm
Ozone (O_3)	8 hour	0.113 ppm	0.101 ppm	0.132 ppm	0.08 ppm	-
Carbon Monoxide (CO)	8 hour	3.2 ppm	2.6 ppm	2.34 ppm	9.0 ppm	9.0 ppm
Nitrogen Dioxide (NO_2)	1 hour	0.076 ppm	0.086 ppm	0.070 ppm	-	.025 ppm
Nitrogen Dioxide (NO_2)	Annual Average	0.017 ppm	0.017 ppm	0.016 ppm	0.053 ppm	-
Particulates (PM_{10})	24 hour	117 mg/m^3	107 mg/m^3	77.7 mg/m^3	150 mg/m^3	50 mg/m^3
Particulates (PM_{10})	Federal Annual Arithmetic Mean	37.7 mg/m^3	32.0 mg/m^3	34.4 mg/m^3	50 mg/m^3	20 mg/m^3
Particulates ($PM_{2.5}$)	24 hour	71.0 mg/m^3	103.8 mg/m^3	79.5 mg/m^3	65 mg/m^3	-
Particulates ($PM_{2.5}$)	Federal Annual Arithmetic Mean	16.7 mg/m^3	18.8 mg/m^3	17.3 mg/m^3	15 mg/m^3	12 mg/m^3

Source: CARB Website, 2010

TABLE 3-4
Maximum Pollutant Levels at Parlier's Monitoring Station

Pollutant	Time Averaging	2006 Maximums	2007 Maximums	2008 Maximums	Standards National	Standards State
Ozone (O_3)	1 hour	0.131 ppm	0.113 ppm	0.137 ppm	-	0.09 ppm
Ozone (O_3)	8 hour	0.107 ppm	0.096 ppm	0.116 ppm	0.08 ppm	-
Carbon Monoxide (CO)[a]	8 hour	3.2 ppm	2.6 ppm	2.34 ppm	9.0 ppm	9.0 ppm
Nitrogen Dioxide (NO_2)	1 hour	0.062 ppm	0.055 ppm	0.049 ppm	-	.025 ppm
Nitrogen Dioxide (NO_2)	Annual Average	0.011 ppm	0.011 ppm	0.009 ppm	0.053 ppm	-
Particulates (PM_{10})[a]	24 hour	117 mg/m^3	107 mg/m^3	77.7 mg/m^3	150 mg/m^3	50 mg/m^3
Particulates (PM_{10})[a]	Federal Annual Arithmetic Mean	37.7 mg/m^3	32.0 mg/m^3	34.4 mg/m^3	50 mg/m^3	20 mg/m^3
Particulates ($PM_{2.5}$)[a]	24 hour	71.0 mg/m^3	103.8 mg/m^3	79.5 mg/m^3	65 mg/m^3	-
Particulates ($PM_{2.5}$)[a]	Federal Annual Arithmetic Mean	16.7 mg/m^3	18.8 mg/m^3	17.3 mg/m^3	15 mg/m^3	12 mg/m^3

a. Fresno's 1st Street Monitoring Station
Source: CARB Website, 2010

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

Pollutant	Designation/Classification	
	Federal Standards	State Standards
Ozone- 1 Hour	No Federal Standard	Non-attainment/Severe
Ozone - 8 Hour	Non-attainment	No State Standard
PM_{10}	Attainment	Non-attainment
$PM_{2.5}$	Non-attainment	Non-attainment
Carbon Monoxide	Unclassified/Attainment	Attainment
Nitrogen Dioxide	Unclassified/Attainment	Attainment
Sulfur Dioxide	Unclassified	Attainment
Lead Particulates	No Federal Standard	Attainment

Source: CARB

Notes:

National Designation Categories

Non-Attainment Area: Any area that does not meet (or that contributes to ambient air quality in a nearby area that does not meet) the national primary or secondary ambient air quality standard for the pollutant.

Unclassified/Attainment Area: Any area that cannot be classified on the basis of available information as meeting or not meeting the national primary or secondary ambient air quality standard for the pollutant or meets the national primary or secondary ambient air quality standard for the pollutant.

State Designation Categories

Unclassified: A pollutant is designated unclassified if the data are incomplete and do not support a designation of attainment or non-attainment.

Attainment: A pollutant is designated attainment if the State standard for that pollutant was not violated at any site in the area during a three-year period.

Non-attainment: A pollutant is designated non-attainment if there was at least one violation of a State standard for that pollutant in the area.

Non-Attainment/Transitional: A subcategory of the non-attainment designation. An area is designated non-attainment/transitional to signify that the area is close to attaining the standard for the pollutant.

Local Controls

- Local Control Mechanisms

  - *General Plans:* The most comprehensive land use planning for the Fresno 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
  - Alternative work schedules

  Fresno County and its fifteen 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. Caltrans and Fresno COG continue to fund a "freeway service patrol," which was expanded to include the Freeway 180 gap, Freeway 99 and Freeway 168 in the FCMA, in addition to over 10 miles of Freeway 41. Towing and repair services are provided during peak commute times for disabled vehicles, minimizing the delay of drivers slowing to observe or avoid obstruction. Central Valley Ridesharing provides rideshare programs in Fresno County and is funded by Fresno COG. It also provides ride matching within the four counties of Fresno, Kings, Madera, and Tulare. [2]

Environmental Setting

This section describes existing air quality within the San Joaquin Valley Air Basin and in Fresno 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 2.5 microns in size ($PM_{2.5}$). A complete description of the current air quality requirements is provided in Appendix C, of the 2011 RTP and FTIP Air Quality Conformity Finding. The Conformity Finding provides 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.

[2] Council of Fresno County Governments – 2011 Regional Transportation Plan (RTP)

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

Fresno County is located within the San Joaquin Valley Air Basin [as determined by the California Air Resources Board (CARB)]. Exhibit 3-2 provides a map of the Air Basin. Air basins are geographic areas sharing a common "air shed." A description of the Air Basin in the County, as designated by CARB, is provided below. Air pollution is directly related to the region's topographic features, which impact air movement within the Basin.

Wind patterns within the SJVAB result from marine air that generally flows into the Basin from the San Joaquin River Delta. The Coastal Range hinders wind access into the Valley from the west, the Tehachapi's prevent southerly passage of airflow, and the high Sierra Nevada Mountain Range provides a significant barrier to the east. These topographic features result in weak airflow that becomes restricted vertically by high barometric pressure over the Valley. As a result, the SJVAB is highly susceptible to pollutant accumulation over time. Most of the surrounding mountains are above the normal height of summer inversion layers (1,500-3,000 feet).

Climatic Conditions

In addition to topographic conditions, the local climate can also contribute to air quality problems. Light winds and atmospheric stability provide frequent opportunities for pollutants to accumulate in the atmosphere. Wind speed and direction also play an important role in the dispersion and transport of air pollutants. Wind at the surface and aloft can disperse pollution by mixing vertically and by transporting it to other locations.

Ozone is classified as a "regional" pollutant due in part to the time required for ozone formation. Ozone, however, is not a directly emitted pollutant. Ozone is formed when its precursors, nitrogen oxides (NO_X) and volatile organic compounds (VOC), react in the presence of sunlight. Ozone precursors can be easily transported by winds from a source area before ozone concentrations peak. In addition, temperature and solar radiation are important factors in the chemistry of ozone formation because ozone is formed in a photochemical reaction requiring sunlight. Generally, higher temperatures create greater amounts of ozone, since reaction rates increase with temperature. However, extremely hot temperatures can lift or break the inversion layer.

Localized pollutants, carbon monoxide (CO) for example, may form high concentrations when wind speed is low. Temperature inversions can also be caused by surface radiant cooling. On clear winter nights, the ground loses heat at a rapid rate, causing air in contact with it to cool. Once formed, radiation inversions are similar to subsidence inversions with respect to their effects on pollutant dilution. A description of specific climatic factors in the Air Basin is provided below.

Climate in the San Joaquin Valley is Mediterranean with moist cool winters and dry warm summers. Precipitation is confined primarily to the winter months. The Fresno County portion of the SJVAB had an average annual rainfall over a 30-year period of approximately 14 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 Air District is the agency empowered to regulate air pollutant emissions. The Air 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 Fresno County are:

- The sink effect, climatic subsidence and temperature inversions and low wind speeds.
- Automobile and truck travel.
- 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 Fresno 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 Fresno County consist of agricultural production and processing operations, wine production, and marketing operations.

The primary contributors of PM 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.

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 Air District 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), 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 Fresno County follow.

- Ozone (1-hour and 8-hour)

  The most severe air quality problem in the Air Basin is the high level of ozone. Ozone occurs in two layers of the atmosphere. The layer surrounding the earth's surface is the troposphere. Here, ground level, or "bad" ozone, is an air pollutant that damages human health, vegetation, and many common materials. It is a key ingredient of urban smog. The troposphere extends to a level about 10 miles up, where it meets the second layer, the stratosphere. The stratospheric, or "good" ozone layer, extends upward from about 10 to 30 miles and protects life on earth from the sun's harmful ultraviolet rays.

  "Bad" ozone is what is known as a photochemical pollutant. It needs reactive organic gases (ROG), NO_x, and sunlight. ROG and NO_x are emitted from various sources throughout Fresno County. In order to reduce ozone concentrations, it is necessary to control the emissions of these ozone precursors.

Significant ozone formation generally requires an adequate amount of precursors in the atmosphere and several hours in a stable atmosphere with strong sunlight. High ozone concentrations can form over large regions when emissions from motor vehicles and stationary sources are carried hundreds of miles from their origins.

Ozone is a regional air pollutant. It is generated over a large area and is transported and spread by wind. Ozone, the primary constituent of smog, is the most complex, difficult to control, and pervasive of the criteria pollutants. Unlike other pollutants, ozone is not emitted directly into the air by specific sources. Ozone is created by sunlight acting on other air pollutants (called precursors), specifically NO_x and ROG. Sources of precursor gases to the photochemical reaction that form ozone number in the thousands. Common sources include consumer products, gasoline vapors, chemical solvents, and combustion products of various fuels. Originating from gas stations, motor vehicles, large industrial facilities, and small businesses such as bakeries and dry cleaners, the ozone-forming chemical reactions often take place in another location, catalyzed by sunlight and heat. High ozone concentrations can form over large regions when emissions from motor vehicles and stationary sources are carried hundreds of miles from their origins. Approximately 50 million people lived in counties with air quality levels above the EPA's health-based national air quality standard in 1994. The highest levels of ozone were recorded in Los Angeles, closely followed by the San Joaquin Valley. High levels also persist in other heavily populated areas, including the Texas Gulf Coast and much of the Northeast.

While the ozone in the upper atmosphere absorbs harmful ultraviolet light, ground-level ozone is damaging to the tissues of plants, animals, and humans, as well as to a wide variety of inanimate materials such as plastics, metals, fabrics, rubber, and paints. Societal costs from ozone damage include increased medical costs, the loss of human and animal life, accelerated replacement of industrial equipment, and reduced crop yields.

Health Effects

While ozone in the upper atmosphere protects the earth from harmful ultraviolet radiation, high concentrations of ground-level ozone can adversely affect the human respiratory system. Many respiratory ailments, as well as cardiovascular disease, are aggravated by exposure to high ozone levels. Ozone also damages natural ecosystems, such as: forests and foothill communities; agricultural crops; and some man-made materials, such as rubber, paint, and plastic. High levels of ozone may negatively affect immune systems, making people more susceptible to respiratory illnesses, including bronchitis and pneumonia. Ozone accelerates aging and exacerbates pre-existing asthma and bronchitis and, in cases with high concentrations, can lead to the development of asthma in active children. Active people, both children and adults, appear to be more at risk from ozone exposure than those with a low level of activity. Additionally, the elderly and those with respiratory disease are also considered sensitive populations for ozone.

People who work or play outdoors are at a greater risk for harmful health effects from ozone. Children and adolescents are also at greater risk because they are more likely than adults to spend time engaged in vigorous activities. Research indicates that children under 12 years of age spend nearly twice as much time outdoors daily than adults. Teenagers spend at least twice as much time as adults in active sports and outdoor activities. In addition, children inhale more air per pound of body weight than adults, and they breathe more rapidly than adults. Children are less likely than adults to notice their own symptoms and avoid harmful exposures.

Ozone is a powerful oxidant—it can be compared to household bleach, which can kill living cells (such as germs or human skin cells) upon contact. Ozone can damage the respiratory tract, causing inflammation and irritation, and it can induce symptoms such as coughing, chest tightness, shortness of breath, and worsening of asthmatic symptoms. Ozone in sufficient doses increases the permeability of lung cells, rendering them more susceptible to toxins and microorganisms. Exposure to levels of ozone above the current ambient air quality standard leads to lung inflammation and lung tissue damage and a reduction in the amount of air inhaled into the lungs.

The standards for Ozone are not being met in the SJVAB for federal and state standards.

- Suspended PM (PM10 and PM2.5)

Particulate matter pollution consists of very small liquid and solid particles that remain suspended in the air for long periods. Some particles are large or concentrated enough to be seen as soot or smoke. Others are so small they can be detected only with an electron microscope. Particulate matter is a mixture of materials that can include smoke, soot, dust, salt, acids, and metals. Particulate matter is emitted from stationary and mobile sources, including diesel trucks and other motor vehicles; power plants; industrial processes; wood-burning stoves and fireplaces; wildfires; dust from roads, construction, landfills, and agriculture; and fugitive windblown dust. PM_{10} refers to particles less than or equal to 10 microns in aerodynamic diameter. $PM_{2.5}$ refers to particles less than or equal to 2.5 microns in aerodynamic diameter and are a subset of PM_{10}. Particulates of concern are those that are 10 microns or less in diameter. These are small enough to be inhaled, pass through the respiratory system and lodge in the lungs, possibly leading to adverse health effects.

In the western United States, there are sources of PM_{10} in both urban and rural areas. Because particles originate from a variety of sources, their chemical and physical compositions vary widely. The composition of PM_{10} and $PM_{2.5}$ can also vary greatly with time, location, the sources of the material and meteorological conditions. Dust, sand, salt spray, metallic and mineral particles, pollen, smoke, mist, and acid fumes are the main components of PM_{10} and $PM_{2.5}$. In addition to those listed previously, secondary particles can also be formed as precipitates from chemical and photochemical reactions of gaseous sulfur dioxide (SO_2) and NO_x in the atmosphere to create sulfates (SO_4) and nitrates NO_3.. Secondary particles are of greatest concern during the winter months where low inversion layers tend to trap the precursors of secondary particulates.

The CARB 2008 PM2.5 Plan builds upon the aggressive emission reduction strategy adopted in the 2007 Ozone Plan and strives to bring the valley into attainment status for the 1997 NAAQS for PM2.5. The 2008 PM2.5 Plan indicates that all planned reductions (from the 2007 Ozone Plan and state controls) plus significant reductions from new measures will be needed to attain the annual standard.

The following new controls considered in the 2008 PM2.5 Plan include:

- Tighter restrictions on residential wood burning and space heating.
- More stringent limits on PM2.5, SO_2, and NO_x emissions from industrial sources.
- Measures to reduce emissions from prescribed burning and agricultural burning.
- More effective work practices to control PM2.5 in fugitive dust.

The control strategy in this plan would also bring the valley closer to attainment status for the 2006 daily PM2.5 standard. The district presented the draft 2008 PM2.5 Plan to the District Governing Board on April 17, 2008, following a 30-day public comment period. This plan was delivered to the EPA in April 2008.

Health Effects

PM_{10} and $PM_{2.5}$ particles are small enough—about one-seventh the thickness of a human hair, or smaller—to be inhaled and lodged in the deepest parts of the lung where they evade the respiratory system's natural defenses. Health problems begin as the body reacts to these foreign particles. Acute and chronic health effects associated with high particulate levels include the aggravation of chronic respiratory diseases, heart and lung disease, and coughing, bronchitis, and respiratory illnesses in children. Recent mortality studies have shown a statistically significant direct association between mortality and daily concentrations of particulate matter in the air. Non-health-related effects include reduced visibility and soiling of buildings. PM_{10} can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability

to fight infections. PM_{10} and $PM_{2.5}$ can aggravate respiratory disease and cause lung damage, cancer, and premature death.

Although particulate matter can cause health problems for everyone, certain people are especially vulnerable to adverse health effects of PM_{10}. These "sensitive populations" include children, the elderly, exercising adults, and those suffering from chronic lung disease such as asthma or bronchitis. Of greatest concern are recent studies that link PM_{10} exposure to the premature death of people who already have heart and lung disease, especially the elderly. Acidic PM_{10} can also damage manmade materials and is a major cause of reduced visibility in many parts of the United States.

The standards for PM_{10} are being met in the SJVAB for federal standards but are not being met for state standards. The standards for $PM_{2.5}$ are not being met in the SJVAB for federal and state standards.

- Carbon Monoxide (CO)

Carbon monoxide (CO) is emitted by mobile and stationary sources as a result of incomplete combustion of hydrocarbons or other carbon-based fuels. CO is an odorless, colorless, poisonous gas that is highly reactive. CO is a byproduct of motor vehicle exhaust, contributes more than two thirds of all CO emissions nationwide. In cities, automobile exhaust can cause as much as 95 percent of all CO emissions. These emissions can result in high concentrations of CO, particularly in local areas with heavy traffic congestion. Other sources of CO emissions include industrial processes and fuel combustion in sources such as boilers and incinerators. Despite an overall downward trend in concentrations and emissions of CO, some metropolitan areas still experience high levels of CO.

Health Effects

CO enters the bloodstream and binds more readily to hemoglobin than oxygen, reducing the oxygen-carrying capacity of blood and thus reducing oxygen delivery to organs and tissues. The health threat from CO is most serious for those who suffer from cardiovascular disease. Healthy individuals are also affected but only at higher levels of exposure. At high concentrations, CO can cause heart difficulties in people with chronic diseases and can impair mental abilities. Exposure to elevated CO levels is associated with visual impairment, reduced work capacity, reduced manual dexterity, poor learning ability, difficulty performing complex tasks, and in prolonged, enclosed exposure, death.

The adverse health effects associated with exposure to ambient and indoor concentrations of CO are related to the concentration of carboxyhemoglobin (COHb) in the blood. Health effects observed may include an early onset of cardiovascular disease; behavioral impairment; decreased exercise performance of young, healthy men; reduced birth weight; sudden infant death syndrome (SIDS); and increased daily mortality rate.

Most of the studies evaluating adverse health effects of CO on the central nervous system examine high-level poisoning. Such poisoning results in symptoms ranging from common flu and cold symptoms (shortness of breath on mild exertion, mild headaches, and nausea) to unconsciousness and death.

The standards for Carbon Monoxide are being met in the SJVAB for federal standards.

- Nitrogen Dioxide (NO_2)

Nitrogen oxides (NO_x) are a family of highly reactive gases that are primary precursors to the formation of ground-level ozone and react in the atmosphere to form acid rain. NO_x is emitted from combustion

processes in which fuel is burned at high temperatures, principally from motor vehicle exhaust and stationary sources such as electric utilities and industrial boilers. A brownish gas, NO_x is a strong oxidizing agent that reacts in the air to form corrosive nitric acid, as well as toxic organic nitrates.

Health Effects

NO_x is an ozone precursor that combines with Reactive Organic Gases (ROG) to form ozone. See the ozone section above for a discussion of the health effects of ozone.

Direct inhalation of NO_x can also cause a wide range of health effects. NO_x can irritate the lungs, cause lung damage, and lower resistance to respiratory infections such as influenza. Short-term exposures (e.g., less than 3 hours) to low levels of nitrogen dioxide (NO_2) may lead to changes in airway responsiveness and lung function in individuals with preexisting respiratory illnesses. These exposures may also increase respiratory illnesses in children. Long-term exposures to NO_2 may lead to increased susceptibility to respiratory infection and may cause irreversible alterations in lung structure. Other health effects associated with NO_x are an increase in the incidence of chronic bronchitis and lung irritation. Chronic exposure to NO_2 may lead to eye and mucus membrane aggravation, along with pulmonary dysfunction. NO_x can cause fading of textile dyes and additives, deterioration of cotton and nylon, and corrosion of metals due to production of particulate nitrates. Airborne NO_x can also impair visibility. NO_x is a major component of acid deposition in California. NO_x may affect both terrestrial and aquatic ecosystems. NO_x in the air is a potentially significant contributor to a number of environmental effects such as acid rain and eutrophication in coastal waters. Eutrophication occurs when a body of water suffers an increase in nutrients that reduce the amount of oxygen in the water, producing an environment that is destructive to fish and other animal life.

NO_2 is toxic to various animals as well as to humans. Its toxicity relates to its ability to combine with water to form nitric acid in the eye, lung, mucus membranes, and skin. Studies of the health impacts of NO_2 include experimental studies on animals, controlled laboratory studies on humans, and observational studies.

In animals, long-term exposure to NO_x increases susceptibility to respiratory infections, lowering their resistance to such diseases as pneumonia and influenza. Laboratory studies show susceptible humans, such as asthmatics, exposed to high concentrations of NO_2, can suffer lung irritation and, potentially, lung damage. Epidemiological studies have also shown associations between NO_2 concentrations and daily mortality from respiratory and cardiovascular causes as well as hospital admissions for respiratory conditions.

NO_x contributes to a wide range of environmental effects both directly and when combined with other precursors in acid rain and ozone. Increased nitrogen inputs to terrestrial and wetland systems can lead to changes in plant species composition and diversity. Similarly, direct nitrogen inputs to aquatic ecosystems such as those found in estuarine and coastal waters can lead to eutrophication as discussed above. Nitrogen, alone or in acid rain, also can acidify soils and surface waters. Acidification of soils causes the loss of essential plant nutrients and increased levels of soluble aluminum, which is toxic to plants. Acidification of surface waters creates conditions of low pH and levels of aluminum that are toxic to fish and other aquatic organisms.

The standards for Nitrogen Dioxide are being met in the SJVAB for federal and state standards.

- Sulfur Dioxide (SO_2)

The major source of sulfur dioxide (SO_2) is the combustion of high-sulfur fuels for electricity generation, petroleum refining and shipping. High concentrations of SO_2 can result in temporary breathing impairment for asthmatic children and adults who are active outdoors. Short-term exposures of asthmatic individuals to

elevated SO_2 levels during moderate activity may result in breathing difficulties that can be accompanied by symptoms such as wheezing, chest tightness, or shortness of breath. Other effects that have been associated with longer-term exposures to high concentrations of SO_2, in conjunction with high levels of PM, include aggravation of existing cardiovascular disease, respiratory illness, and alterations in the lungs' defenses. SO_2 also is a major precursor to $PM_{2.5}$, which is a significant health concern and a main contributor to poor visibility. In humid atmospheres, sulfur oxides can react with vapor to produce sulfuric acid, a component of acid rain.

The standards for SO_2 are being met in the SJVAB.

- Lead (Pb)

Lead, a naturally occurring metal, can be a constituent of air, water, and the biosphere. Lead is neither created nor destroyed in the environment, so it essentially persists forever. Lead was used until recently to increase the octane rating in automobile fuel. Since the 1980s, lead has been phased out in gasoline, reduced in drinking water, reduced in industrial air pollution, and banned or limited in consumer products. Gasoline-powered automobile engines were a major source of airborne lead through the use of leaded fuels; however, the use of leaded fuel has been mostly phased out. Since this has occurred the ambient concentrations of lead have dropped dramatically.

Exposure to lead occurs mainly through inhalation of air and ingestion of lead in food, water, soil, or dust. It accumulates in the blood, bones, and soft tissues and can adversely affect the kidneys, liver, nervous system, and other organs. Excessive exposure to lead may cause neurological impairments such as seizures, mental retardation, and behavioral disorders. Even at low doses, lead exposure is associated with damage to the nervous systems of fetuses and young children. Effects on the nervous systems of children are one of the primary health risk concerns from lead. In high concentrations, children can even suffer irreversible brain damage and death. Children 6 years old and under are most at risk, because their bodies are growing quickly.

The standards for Lead are being met in the SJVAB for state standards.

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, Rate of Progress (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 Finding for the 2011 RTP and Federal Transportation Improvement Program (FTIP). The Conformity Finding includes a complete description of each TCM contained in the current SIP, the SJVAPCD AQAP, the TCM Program, and in the ROP Plans.

A complete description of the current air quality requirements is provided in the 2011 RTP and the latest Air Quality Conformity Findings are included on the Fresno COG website at www.fresnocog.org.

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 Fresno region. The assessment is not site or 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.
- 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 Particulate Matter 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 proposed individual improvement projects. 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 – Project Construction

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.
- 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 the roadways' 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 Air District has developed thresholds of significance for individual construction projects. 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 individual improvement project. Mitigation measures to reduce air quality impacts would be established in 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. Fresno COG will be provided with documentation indicating compliance with mitigation measures.

- Project implementation agencies will ensure implementation of mitigation measures to reduce PM 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 5 percent 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 15 mph or less.
    - Pave all construction access roads at least 100 feet on to the site from permanent roadways.
    - Cover all haul trucks.

- Project implementation agencies will avoid individual 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 – Point Source Impacts

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 50 percent increase in population projected by the Year 2035. 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 Measures

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 – Long-Term Regional Impacts

Emissions impacts related to the Project are not considered to be significant. Table 3-6 identifies results of the air quality conformity results including the projected emissions of hydrocarbons, nitrogen oxides, carbon monoxide, volatile organic gases, and particulate emissions for the Project compared with the base (2002) or the emissions budgets for 2010 and 2018. The analysis shows that Project emissions do not exceed the base and budget thresholds established by EPA. While the Project meets Conformity requirements, the Conformity Finding requires the implementation of TCMs to eventually result in improved air quality within the Valley.

TABLE 3-6
2011 RTP Project Air Quality Conformity Results

Pollutant	Scenario	Emissions Total		DID YOU PASS?
		CO (tons/day)		CO
Carbon Monoxide	2010 Budget	240		
	2017	84		YES
	2018 Budget	240		
	2018	81		YES
	2025	59		YES
	2035	54		YES

		ROG (tons/day)	NOx (tons/day)		ROG	NOx
Ozone	2011 Budget	15.5	47.9			
	2011	15.3	47.6		YES	YES
	2014 Budget	12.9	37.2			
	2014	12.7	36.6		YES	YES
	2017 Budget	11.1	29.1			
	2017	10.9	28.7		YES	YES
	2023	8.8	19.6		YES	YES
	2025	8.4	17.9		YES	YES
	2035	7.3	15.4		YES	YES

		PM-10 (tons/day)	NOx (tons/day)		PM-10	NOx
PM-10	Adjusted 2020 Budget	15.3	24.4			
	2020	15.3	23.4		YES	YES
	Adjusted 2020 Budget	16.4	22.8			
	2025	16.4	18.2		YES	YES
	Adjusted 2020 Budget	18.9	19.0			
	2035	18.9	15.6		YES	YES

Option 1: Assumes Adequate Conformity Budgets

		PM2.5 (tons/day)	NOx (tons/day)		PM2.5	NOx
1997 PM2.5 24-Hour & Annual Standards and 2006 24-Hour Standard	2012 Budget	1.9	44.2			
	2012	1.8	43.8		YES	YES
	2014	1.6	36.9		YES	YES
	2017	1.3	28.6		YES	YES
	2025	1.2	17.6		YES	YES
	2035	1.3	15.0		YES	YES

TABLE 3-6
2011 RTP Project Air Quality Conformity Results
(Continued)

Option 2: Assumes no EPA action on conformity budgets

		PM2.5 (tons/day)	NOx (tons/day)		PM2.5	NOx
1997 PM2.5 24-Hour Standards	2002 Base Year	2.2	63.4			
	2014	1.6	37.8		YES	YES
	2017	1.4	29.6		YES	YES
	2025	1.2	18.2		YES	YES
	2035	1.3	15.6		YES	YES

		PM2.5 (tons/year)	NOx (tons/year)		PM2.5	NOx
1997 PM2.5 Annual Standard	2002 Base Year	803	23141			
	2014	584	13797		YES	YES
	2017	511	10804		YES	YES
	2025	438	6643		YES	YES
	2035	475	5694		YES	YES

		PM2.5 (tons/day)	NOx (tons/day)		PM2.5	NOx
2006 PM2.5 24-Hour Standards	2008 Base Year	2.3	63.4			
	2014	1.6	37.8		YES	YES
	2017	1.4	29.6		YES	YES
	2025	1.2	18.2		YES	YES
	2035	1.3	15.6		YES	YES

Mitigation Measures

- 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 Finding for the 2011 RTP and Federal Transportation Improvement Program (FTIP).

- All applicable rules and regulations adopted by the Air District will be followed by responsible and implementing agencies as individual improvement projects are designed, constructed and maintained. Fresno COG will be provided with documentation indicating compliance with all mitigation measures.

Significance After Mitigation

The Project will result in beneficial effects of system-wide improvement in traffic flows and reduced congestion and vehicle trips and vehicle miles traveled, which would reduce the potential for increased air emissions when compared to emissions budgets established by EPA. While TCMs have been identified in the Air Quality Conformity Finding, the TCMs will not result in attainment of all pollutants over time or by the year 2035. As a result, long-term emission impacts cannot be reduced to a less-than-significant level even with the addition of projects and programs outlined in the RTP.

3.4 BIOTIC RESOURCES

Fresno County contains a wealth of biotic resources due to the County's varied topography and climatic conditions. Numerous government agencies are tasked with identifying and protecting those resources, which are described later. Because transportation facilities may have an impact on special status animals, plants and habitats, this section addresses the current status of those biological resources and assesses the potential impacts from region-wide construction of transportation facilities.

Regulatory Setting

Federal Regulations

- Clean Water Act (CWA)

  The Clean Water Act establishes the basic structure for regulating discharges of pollutants into the waters of the United States. It gives EPA the authority to implement pollution control programs such as setting wastewater standards for industry. The Clean Water Act also continued requirements to set water quality standards for all contaminants in surface waters. The Act made it unlawful for any person to discharge any pollutant from a point source into navigable waters, unless a permit was obtained under its provisions.

- Federal Endangered Species Act (ESA)

  The Endangered Species Act provides a program for the conservation of threatened and endangered plants and animals and the habitats in which they are found. The U.S. Fish and Wildlife Service maintains the list of endangered and threatened species.

- 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.

- 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.

- 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.

<u>Federal Agencies</u>

- 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) 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 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.

- Council on Environmental Quality (CEQ) and U.S. Environmental Protection Agency (US EPA)

  NEPA mandates that the federal government shall give appropriate consideration to potential adverse environmental impacts of their major actions, including impacts to biological resources. The Council on Environmental Quality oversees NEPA, and the EPA carries out administrative aspects of the NEPA process.

State Regulations

- California Endangered Species Act (CESA)

  The California Endangered Species Act prohibits "take" of any species that the commission determines to be an endangered species or a threatened species. Take is defined as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." CESA emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate mitigation planning to offset project-caused losses of listed species populations and their essential habitats.

- 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).

- Native Plant Protection Act (NPPA)

  The Native Plant Protection Act directed the Department of Fish and Game (DFG) to preserve protect and enhance rare and endangered plants in California. The NPPA gave the California Fish and Game Commission the power to designate native plants as "endangered" or "rare" and protected endangered and rare plants from take.

- 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 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 of the jurisdiction. Since 1971, state law has required the city or county zoning code to be consistent with the jurisdiction's general plan.

- 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.

Environmental Setting

The CDFG maintains several databases on biotics, including the California Natural Diversity Database (CNDDB) and the Wildlife Habitat Relationships (WHR) information systems. These databases will be discussed further in the section in which it is referenced. Both the CNDDB and WHR are available for review in the Fresno Office of CDFG and are hereby incorporated by reference.

Habitat

- Habitat Areas

A habitat is the physical environment in which a particular species lives and grows. The CDFG defines all habitats in the State of California in its Wildlife Habitat Relationships (WHR) information system. Based on that system, Fresno County is composed of four biotic regions that support over 30 different habitats. Figure 3-3 identifies the biotic regions and their approximate locations in Fresno County based upon the CNDDB. Three of the four biotic regions, the Central Coast Range, the San Joaquin Valley Floor and the Central/Southern Sierra Nevada Foothills, share similar habitats, which are identified below in Table 3-7.

The fourth biotic region, the Central/Southern High Sierra Nevada has habitats that are not included in the three other biotic regions in Fresno County, which are: Aspen, Montane Chaparal, Montane Hardwood-Conifer, Montane Riparian, Montane Hardwood, Sierran Mixed Conifer, Ponderosa Pine, Jeffrey Pine, White Fir, Red Fir, Lodgepole Pine, Subalpine Conifer, Alpine Dwarf Scrub, Wet Meadow, Bitterbrush, Juniper and Pinyon-Juniper.

- Special Habitat Areas

The number and area of freshwater marshes, riparian habitat, grassland and scrub habitats have diminished in recent years due to the combination of water diversion practices and development. Several sensitive habitats, as identified by the CNDDB, are located within Fresno County, including:

- Big Tree Forest
- Coastal and Valley Freshwater Marsh
- Great Valley Mesquite Scrub
- Great Valley Mixed Riparian Forest
- Monvero Residual Dunes
- Northern Basalt Flow Vernal Pool
- Northern Claypan Vernal Pool
- Northern Hardpan Vernal Pool
- Northern Vernal Pool
- Sycamore Alluvial Woodland
- Valley Needlegrass Grassland
- Valley Sink Scrub

Migratory Deer Herd. California mule deer herds in Fresno County winter within the foothills area and move to higher elevations during the summer.

Significant Natural Areas. Eight significant natural areas have been identified by the CDFG under the Significant Natural Areas program. These areas include northern hardpan vernal pool and alkaline desert scrub, as well as habitat for sensitive species such as the orange lupine, Mariposa pussypaws, and the Paiute cutthroat trout.

Waterways of Importance. The county's waterways represent the major remaining natural habitat of value for wildlife and plant species. Waterways can occur in the forms of lakes, rivers, canals, and reservoirs. Fresno County has approximately 430 “lakes” or inland water bodies, which are in the form of lagoons, ponds, and larger water bodies. Fresno County also has approximately 410 streams that are in the form of creeks, distributaries, rivers, and sloughs.

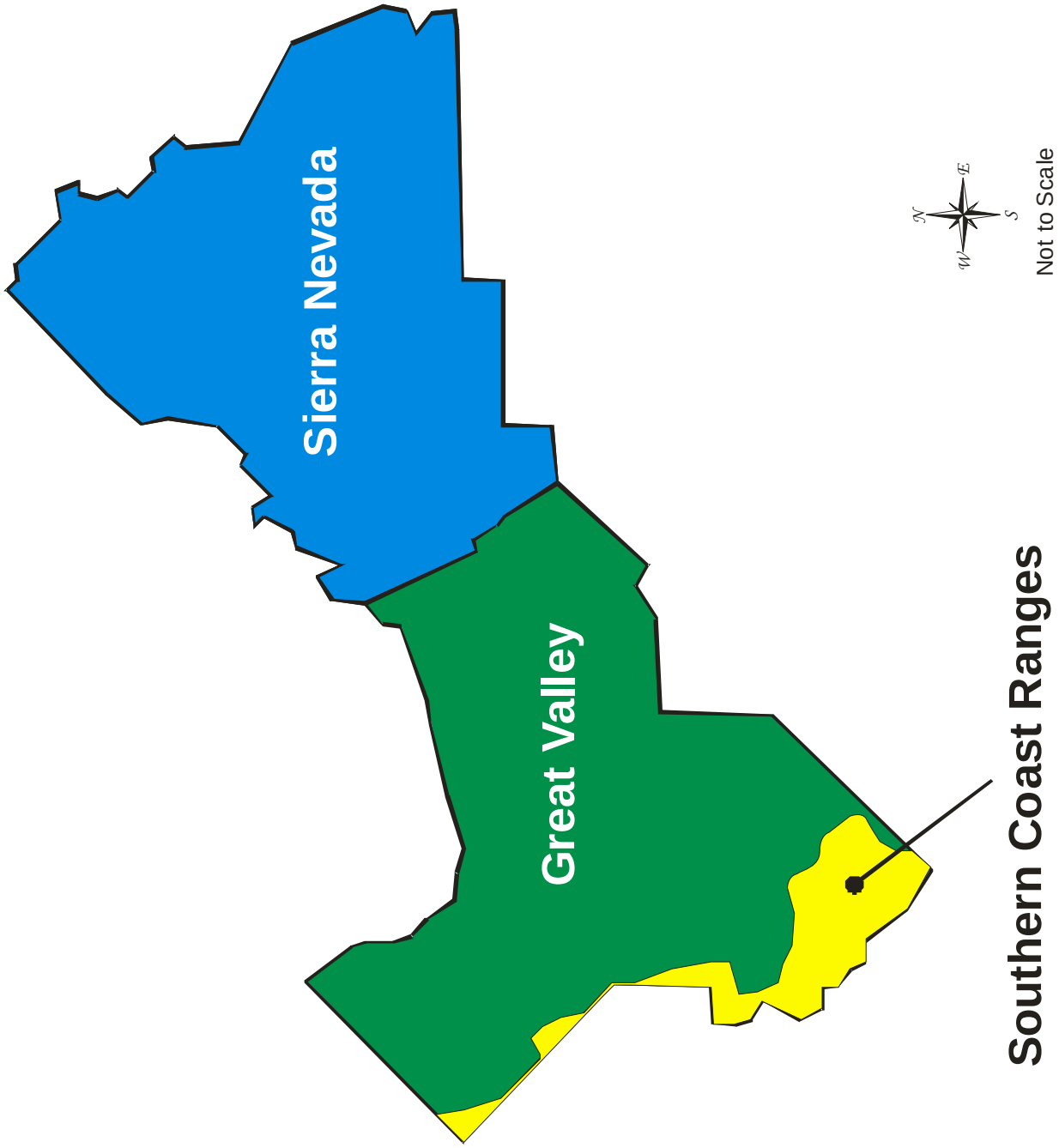


FIGURE 3-3
Fresno COG 2011 RTP Draft SEIR
Biotic Regions

TABLE 3-7
Habitats in the Valley and Foothill Regions of Fresno County

Habitat	Central Coast Range	San Joaquin Valley Floor	Central/Southern Sierra Nevada Foothills
Alkali Desert Scrub		X	
Annual/Ruderal Grassland	X	X	X
Barren	X	X	X
Blue Oak Woodland	X		X
Blue Oak-Foothill Pine Woodland	X		X
Chamise-Redshank Chaparral	X		X
Cropland	X	X	X
Eucalyptus	X	X	X
Fresh Emergent Wetland	X	X	X
Lacustrine	X	X	X
Mixed Chaparral	X		X
Orchard-Vineyard	X	X	X
Pasture	X	X	X
Riverine	X	X	X
Urban	X	X	X
Valley Oak Woodland	X		
Valley-Foothill Riparian	X	X	X
Vernal Pool		X	

Fresno County's major waterways include:

Big Creek
Friant Dam
Lake Thomas Edison
Millerton Lake
Shaver Lake
Courtwright Dam
Huntington Lake
Little Panoche Reservoir
Pine Flat Lake
Wishon Reservoir
Florence Lake
Kings River
Mammoth Pool Reservoir
San Joaquin River

Plants

- Plant Communities

Fresno County is an area of varied topography and diverse ecosystems. The highly varied climatic conditions and topography result in a great diversity of flora throughout Fresno County. Agricultural use, timber harvesting, grazing, and conversion to urban uses have altered a significant amount of the natural vegetation contained in the County.

Within floristic regions of the County, vegetation can be grouped into several different plant communities. These plant associations are often difficult to physically define, due to subtle transitions. Conversely, plant communities may change abruptly, affected by differences in exposure, soil, or relative humidity.

- Special Status and Special Concern Plants

Special status plants are listed as, or candidates for, threatened, rare, or endangered by the USFWS, the CDFG and the California Native Plant Society (CNPS). The CNPS maintains an Inventory of Rare and Endangered Plants. Based on a search of the CNDDB and CNPS's Inventory of Rare and Endangered Plants, there are over 80 plants with special status or special concern listing which are believed to exist within Fresno County. Generally, plants with special status have been found to occur in the foothills and mountainous portions of the Sierra Nevada. These special plant species are summarized in Table 3-8.

TABLE 3-8
Special Status Plants Known or Suspected to Occur in Fresno County
Current Listing Status - March 2006, April 2009

Plant Elements		Global Ranking	State Ranking	CNPS Status	General Location
Alpine jewel-flower	Streptanthus gracilis	G3	S3.3	1B.3	Eastern mountains
Aromatic canyon gooseberry	Ribes menziensii var. ixoderme	G4	S2.2	1B.2	Eastern mountains
Blandow's bog-moss	Helodium blandowii	G5	S1.3	2.3	Eastern border
Bodie Hills rock cress	Arabis bodiensis	G2	S1.2	1B.3	Eastern border
Boggs Lake hedge-hyssop	Gratiola heterosepala	G3	Endangered S3.1	1B.2	Eastern mountains
Bolander's bruchia	Bruchia bolanderi	G2	S2.2	2.2	Eastern mountains
Bolander's clover	Trifolium bolanderi	G3	S3.2	1B.2	Eastern mountains
Bolander's woodreed	Cinna bolanderi	G1	S1.2	1B.2	Eastern mountains
Brittlescale	Atriplex depressa	G2	S2.2	1B.2	Valley Floor and Western foothills
Broad-nerved hump-moss	Meesia uliginosa	G4	S2.2	2.2	Eastern mountains
California jewel-flower	Caulanthus californicus	Endangered G1	Endangered S1.1	1B.1	Western foothills
Congdon's lewisia	Lewisia congdonii	G1	Rare S1.3	1B.3	Eastern mountains
Dwarf calycadenia	Calycadenia villosa	G2	S2.1	1B.1	Western border
Dwarf downingia	Downingia pusilla	G3	S3.1	2.2	Eastern foothills
Elongate copper-moss	Mielichhoferia elongate	G4?	S2.2	2.2	Eastern mountains
field ivesia	Ivesia campestris	G3	S3.2	1B.2	Eastern mountains
Flat-leaved bladderwort	Utricularia intermedia	G5	S2.2	2.2	Eastern mountains
Greene's tuctoria	Tuctoria greenei	Endangered G2	Rare S2.2	1B.1	Eastern foothills and valley floor
Grey-leaved violet	Viola pinetorum ssp. Grisea	G4	S1.3	1B.3	Eastern mountains
Hall's daisy	Erigeron aequifolius	G2	S2.3	1B.3	Eastern mountains
Hall's tarplant	Deinandra halliana	G1	S1.1	1B.1	Western border
Hartweg's golden sunburst	Pseudobahia bahiifolia	Endangered G2	Endangered S2.1	1B.1	Eastern foothills
Heartscale	Atriplex cordulata	-	S2.2	1B.2	Valley Floor
Hockett Meadows lupine	Lupinus lepidus var. calbertsonii	G5	S1.3	1B.3	Eastern border
Indian Valley bush mallow	Malacothamnus aboriginum	G3	S3.2	1B.2	Western border and foothills
Kaweah monkeyflower	Mimulus norrisii	G2	S2.3	1B.3	Eastern mountains
Keck's checkerbloom	Sidalcea keckii	Endangered G1	S1.1	1B.1	Eastern foothills and mountains
Keil's daisy	Erigeron inornatus var. keilii	G5	S1.3	1B.3	Eastern mountains

Plant Elements		Global Ranking	State Ranking	CNPS Status	General Location
Kern River daisy	Erigeron multiceps	G1	S1.2	1B.2	Eastern mountains
Kings River buckwheat	Eriogonum nudum var. regirivum	G5	S2.2	1B.2	Eastern foothills and mountains
Lemmon's jewelflower	Caulanthus coulteri var. lemmonii	G4	S2.2	1B.2	Western foothills
Lesser saltscale	Atriplex minuscule	G1	S1.1	1B.1	Valley floor
Letterman's blue grass	Poa lettermanii	G4	S2.3	2.3	Eastern border
Lost Hill's crownscale	Atriplex vallicola	G1	S1.1	1B.2	Western hills and valley floor
Madera leptosiphon	Leptosiphon serrulatus	G1?	S1?	1B.2	Eastern mountains
Marble rockmat	Petrophyton caespitosum ssp. Acuminatum	G4	S1.3	1B.3	Eastern mountains
Mariposa pussypaws	Calyptridium pulchellum	Threatened G1	S1.1	1B.1	Eastern mountains
Mingan moonwort	Botrychium minganense	G4	S1.2	2.2	Eastern border
Monarch buckwheat	Eriogonum ovalifolium var. monarchense	G5	S1.3	1B.3	Eastern mountains
Monarch gilia	Gilia yorkii	G1	S1.2	1B.2	Eastern mountains
Monarch golden-aster	Heterotheca monarchensis	G1	S1.3	1B.3	Eastern mountains
Mono Hot Springs evening-primrose	Camissonia sierrae sp. Alticola	G3	S2.2	1B.2	Eastern mountains
Mt. Whitney draba	Draba sharsmithii	G1	S1.3	1B.3	Eastern mountains
Muir's tarplant	Carlquistia muirii	G2	S2.3	1B.3	Eastern mountains
Munz's tidy-tips	Layia munzii	G1	S1.1	1B.2	Western foothills and valley floor
Orange lupine	Lupinus citrinus var. citrinus	G2	S2.2	1B.2	Eastern mountains
Oval-leaved viburnum	Viburnum ellipticum	G5	S2.3	2.3	Eastern mountains
Pale peat-moss	Sphagnum strictum	G5	S1.3	2.3	Eastern mountains
Pale-yellow layia	Layia heterotricha	G1	S1.1	1B.1	Western foothills
Palmate-bracted bird's-beak	Cordylanthus palmatus	Endangered G1	Endangered S1.1	1B.1	Valley floor
Panoche pepper-grass	Lepidium jaredii ssp. Album	G1	S1.2	1B.2	Valley floor and Western foothills
Prarie wedge grass	Sphenopholis obtusata	G5	S2.2	2.2	Eastern mountains
Raven's milk-vetch	Astragalus monoensis var. ravenii	G1	S1.2	1B.3	Eastern border
Rayless layia	Layia discoidea	G2	S2.2	1B.1	Western border
Rayless ragwort	Senecio aphanactis	G3?	S1.2	2.2	Western foothills
Recurved larkspur	Delphinium recurvatum	G2	S2.2	1B.2	Valley floor and western foothills
Robin's pondweed	Potamogenton robbinsii	G5	S2.3	2.3	Eastern mountains
Round-leaved filaree	Erodium macrophyllum	G4	S2.1	2.1	Western border
San Benito evening primrose	Camissonia benitensis	Threatened G1	S1.1	1B.1	Western border
San Benito spineflower	Chorizanthe biloba var. immemora	G3	S1?	1B.2	Western border
San Joaquin adobe sunburst	Pseudobahia peirsonii	Threatened G2	Endangered S2.1	1B.1	Eastern foothills
San Joaquin spearscale	Atriplex joaquiniana	G2	S2.1	1B.2	Western border
San Joaquin Valley orcutt grass	Orcuttia inaequalis	Threatened G2	Endangered S2.1	1B.1	Eastern foothills
San Joaquin woollythreads	Monolopia congdonii	Endangered G3	S3.2	1B.2	Western foothills and valley floor
Sanford's arrowhead	Sagittaria sanfordii	G3	S3.2	1B.2	Valley floor and eastern foothills
Sharsmith's stickseed	Hackelia sharsmithii	G3	S2S3	2.3	Eastern border

Plant Elements		Global Ranking	State Ranking	CNPS Status	General Location
Shevock's copper-moss	Schizymenium shevockii	G1	S1.2	1B.2	Eastern foothills eastern mountains
Shining navarretia	Navarretia nigelliformis ssp. Radians	G4	S1.1	1B.2	Western border
Shore sedge	Carex limosa	G5	S3?	2.2	Eastern mountains
Short-leaved hulsea	Hulsea brevifolia	G3	S3.2	1B.2	Eastern mountains
Showy madia	Madia radiate	G2	S2.1	1B.1	Western border and foothills
Sierra draba	Draba sierrae	G2	S2.3	1B.3	Eastern border
Slender moonwort	Botrychium lineare	Candidate G1	S1.3	1B.3	Eastern mountains
Slender-stalked monkeyflower	Mimulus gracilipes	G3	S3.2	1B.2	Eastern mountains
Small mousetail-moss	Myurella julacea	G5	S1.3	2.3	Eastern border
Spiny-sepaled button-celery	Eryngium spinosepalum	G2	S2.2	1B.2	Eastern foothills
Subalpine draba	Draba praealta	G5	S2.3	2.3	Eastern border
Subalpine fireweed	Epilobium howellii	G1	S1.3	1B.3	Eastern mountains
Subtle orache	Atriplex subtilis	G2	S2.2	1B.2	Valley floor
Succulent owl's-clover	Castilleja campestris ssp. Succulenta	Threatened G4?	Endangered S2.2	1B.2	Eastern foothills
Tehipite Valley jewel-flower	Streptanthus fenestratus	G2	S2.3	1B.3	Eastern mountains
Temblor buckwheat	Eriogonum temblorense	G2	S2.2	1B.2	Western border
Three-ranked hump-moss	Meesia triquetra	G5	S2.2	2.2	Eastern mountains
Tree-anemone	Carpentaria californica	G2	Threatened S2.2	1B.2	Eastern foothills and mountains
Tundra thread-moss	Pohlia tundrae	G2	S2.3	2.3	Eastern border and mountains
Yosemite lewisia	Lewisia disepala	G2	S2.2	1B.2	Eastern mountains

Key:

? Indicates some uncertainty in ranking

Global Ranking

Candidate Species is a candidate to be listed under the Federal Endangered Species Act.

Endangered Listed as "endangered" under Federal Endangered Species Act. Species faces possible extinction throughout all, or a significant portion of, its range.

Threatened Although species is not presently at risk of extinction, it is likely to become an endangered species in the foreseeable future in the absence of special protection and management efforts.

G1 = Less than 6 viable element occurrences (EOs) OR less than 1,000 individuals OR less than 2,000 acres.

G2 = 6-20 EOs OR 3,000-10,000 individuals OR 2,000-10,000 acres

G3 = 21-100 EOs OR 3,000-10,000 individuals OR 10,000-50,000 acres

G4 = Apparently secure; this rank is clearly lower than G3 but factors exist to cause some concern; i.e., there is some threat, or somewhat narrow habitat.

G5 = Population or stand demonstrably secure to ineradicable due to being commonly found in the world.

State Ranking

Rare State listed as "rare"

Endangered State listed as "endangered"

Threatened State listed as "threatened"

S1 = Less than 6 EOs OR less than 1,000 individuals OR less than 2,000 acres

S2 = 6-20 EOs OR 1,000-3,000 individuals OR 2,000-10,000 acres

S3 = 21-100 EOs or 3,000-10,000 individuals OR 10,000-50,000 acres

#.1= Very threatened

#.2= Threatened

#.3= no current threats known

California Native Plant Society
1A = Plants presumed extinct in California
1B = Rare everywhere
2 = Rare in California
#.1 = Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)
#.2 = Fairly endangered in California (20-80% occurrences threatened)
#.3 = Not very endangered in California (<20% of occurrences threatened or no current threats known)
Sources:
California Department of Fish and Game, Natural Heritage Division, Natural Diversity Data Base, August 1999.
California Native Plant Society, Inventory of Rare and Endangered Plants, v7-06a, 1/24/2006.

Wildlife

Fresno County's wildlife is equally varied and unique due to the region's diversified habitats and topography. Although many native species and habitats have diminished in numbers and range in recent years, the County does contain varying amounts of deer range, black bear, waterfowl habitat, and special-status species habitat.

- Important Wildlife Areas

Fresno County has two designated wildlife areas within its boundaries, Mendota Wildlife Area and Little Panoche Reservoir Wildlife Area. Mendota Wildlife Areas is three miles south of Mendota on 11,802 acres of flatlands and floodplain. There are more than 165 bird species and sub-species known to occur or reside in the area. Mammals commonly found on the area include coyotes, muskrats, beavers, minks, raccoons, weasels, black-tailed hares, cottontail rabbits, spotted and striped skunks, and ground squirrels. Fish can include crappie, catfish, bluegill, carp, and black and striped bass.

Little Panoche Reservoir Wildlife Area is on 828 acres 5 miles west of Interstate Highway 5 and 30 miles west of Firebaugh in the arid foothills on the western side of the San Joaquin Valley. This wildlife area supports four wildlife habitats (annual grassland, alkali scrub, lacustrine, and valley foothill riparian) and eight different vegetation community types. Kit fox, mule deer, wild pig, kangaroo rats, and over 100 species of birds, including golden eagles, and California quail can be found here. Over 24 species of plants can be found as well. Fish can include Bluegill, Common carp, Crappie, Largemouth bass, Western mosquitofish, and White catfish.

Fresno County also supports non-designated wildlife areas as well. The following provides a brief description.

- *Deer Ranges* - Key areas for summer and winter ranges provide California mule deer herds with forage areas and protective cover generally located in the foothills and the median elevations of the Sierra Nevada. The nutritional level and overall quality of the deer range has been degraded in recent years by urban encroachment and fire suppression techniques that do not allow old growth to be replaced by younger, more nutritious food.

- *Black Bear Habitat* - Black bear occur in the higher elevations of the County, generally in the mountain timber and brush areas.

- *Waterfowl Habitat* - The low-lying marshy areas near the Mendota Wildlife Area, the riparian and marsh areas along the San Joaquin and Kings Rivers, and numerous lakes and reservoirs located in Fresno County provide excellent habitat for many waterfowl species.

- *Birds of Prey Habitat* - Fresno County contains nest sites for the Golden Eagle, Burrowing Owl, Prairie Falcon, and Swainsons Hawk. The nest sites have not been mapped in detail on a countywide basis;

however, they are expected to occur in the foothills of the Sierra Nevada along the northeast County boundary.

- *Seasonal Wetlands* - Vernal pools of varying size are located within Fresno County. Vernal pools have been found to provide habitat for several species of fresh water shrimp including the Vernal Pool Tadpole Shrimp, all of which have been recently listed by the USFWS as Endangered.

Fresno County also has five ecological reserves as well. They include the San Joaquin River, Kerman, Alkali Sink, Panoche Hills, and Pleasant Valley Ecological Reserves. Figure 3-4 illustrates the locations of these wildlife areas and ecological reserves.

Special Status and Special Concern Animals

Fresno County contains a number of animals with special status or special concern. Although the location of these species or habitat areas has not been mapped in detail, generally, the Sierra Nevada is considered of special importance. Historical occurrences of several animals with special-status listing have been recorded or are known to occur within Fresno County according to the CNDDB. Special-status animals include

- Those species, which are officially candidates for, or are officially designated as, rare, threatened, or endangered classification by the CDFG and USFWS.

- Those species which are considered sensitive or of special concern due to limited distribution or lack of adequate information to permit listing or rejection for State or federal status, such as those identified as animal species of special concern (SSC) by CDFG.

Species of Special Concern" (SSC) status applies to animals not listed under the federal Endangered Species Act or the California Endangered Species Act, but which nonetheless 1) are declining at a rate that could result in listing, or 2) historically occurred in low numbers and known threats to their persistence currently exist.

Table 3-9 summarizes the numerous animals of special status believed to exist within Fresno County with special-status listings. Among those listed are fourteen amphibians/reptiles, four fish, twenty-one birds, twenty-two mammals, and twenty insects.

TABLE 3-9
Special Status Animals Known or Suspected to Occur in Fresno County and Current Listing Status - March 2006, November 2009

Common Name	Scientific Name	Global Ranking	State Ranking	CDFG	Other
Amphibians/Reptiles					
Blunt Nosed Leopard Lizard	*Gambelia Silus*	Endangered, G1	Endangered, S1	Fully Protected	-
California red-legged frog	*Rana aurora draytonii*	Threatened, G4	S2	SC	-
California Tiger Salamander	*Ambystoma Californiense*	Threatened, G2	S2	SC	-
Coast (California) horned lizard	*Phrynosoma coronatum (frontale population)*	G4	S2	SC	Sensitive (BLM)
Foothill yellow-legged frog	*Rana Boylii*	G3	S2	SC	Sensitive (BLM, FS)
Giant Garter Snake	*Thamnophis Gigas*	Threatened G2	Threatened, S2	-	-

Common Name	Scientific Name	Global Ranking	State Ranking	CDFG	Other
Mount Lyell salamander	*Hydromantes platycephalus*	G3	S3	SC	-
Mountain yellow-legged frog	*Rana muscosa*	Endangered, G2	S2	SC	Sensitive (FS)
San Joaquin whipsnake	*Masticophis flagellum ruddocki*	G5	S2?	SC	-
Silvery Legless Lizard	*Anniella Pulchra Pulchra*	G3	S3	SC	Sensitive (FS)
Two-striped garter snake	*Thamnophis hammondii*	G2	S2	SC	Sensitive (FS, BLM)
Western Pond Turtle	*Clemmys Marmorata*	G3	S3	SC	-
Western Spadefoot	*Scaphiopus Hammondii*	G3	S3	SC	Sensitive (BLM)
Yosemite toad	*Bufo Canorus*	Candidate, G1	S1	SC	Sensitive (FS)
Fish					
Central Valley Drainage Hardhead/Squawfish Stream	*Central Valley Drainage Hardhead/Squawfish Stream*	G4	S2	-	-
Hardhead	*Mylopharodon Conocephalus*	G3	S3	SC	Sensitive (FS)
Lahontan Cutthroat Trout	*Oncorhynchus Clarki Henshawi*	Threatened G4	S2	-	-
Paiute Cutthroat Trout	Oncorhynchus Clarki Seleniris	Threatened G4	S1	-	-
Birds					
Bald Eagle	*Haliaeetus Leucocephalus* (Nesting & Wintering)	Threatened G4 Delisting Proposed	Endangered S2	Fully Protected	Sensitive (CDF)
Bank Swallow	*Riparia Riparia*	G5	Threatened S2	-	-
Burrowing Owl	*Athene Cunicularia*	G4	S2	SC	Sensitive (BLM) BCC
California Horned Lark	*Eremophila Alpestris Actia*	G5	S3	SC	-
Cooper's hawk	*Accipiter cooperii*	G5	S3	SC	-
Golden Eagle	*Aquila Chrysaetos*	G5	S3	Fully Protected SC	Sensitive (CDF, BLM) BCC
Great Grey Owl	*Strix Nebulosa* (Nesting)	G5	Endangered S1	-	Sensitive (CDF, FS)
Le Conte's thrasher	*Toxostoma lecontei*	G3	S3	SC	Sensitive (BLM) BCC
Merlin	*Falco columbarius*	G5	S3	SC	-
Mountain plover	*Charadrius montanus*	G2	S2	SC	BCC
Northern goshawk	*Accipiter gentilis*	G5	S3	SC	Sensitive (CDF, FS)
osprey	*Pandion haliaetus*	G5	S3	SC	Sensitive (CDF)
Prairie Falcon	*Falco Mexicanus*	G5	S3	SC	BCC
Short-eared owl	*Asio flammeus*	G5	S3	SC	-
Swainsons Hawk	*Buteo Swainsoni*	G5	Threatened S2	-	Sensitive (FS) BCC
Tricolored Blackbird	*Agelaius Tricolor*	G2	S2	SC	Sensitive (BLM) BCC

Common Name	Scientific Name	Global Ranking	State Ranking	CDFG	Other
Western Yellow Billed Cuckoo	*Coccyzus Americanus Occidentalis*	Candidate G5	Endangered S1	-	Sensitive (FS) BCC
White-faced ibis	*Plegadis chihi*	G5	S1	SC	-
Willow Flycatcher	*Empidonax Traillii*	G5	Endangered S1	-	Sensitive (FS)
Yellow warbler	*Dendroica petechia brewsteri*	G5	S2	SC	-
Yellow-headed blackbird	*Xanthocephalus xanthocephalus*	G5	S3	-	-
Mammals					
American badger	*Taxidea taxus*	G5	S4	SC	-
California bighorn sheep	*Ovis Canadensis californiana*	Endangered G4	Endangered S1	Fully Protected	-
California Wolverine	*Gulo Gulo Lueus*	G4	Threatened S2	Fully Protected	Sensitive (FS)
Fresno Kangaroo Rat	*Dipodomys Nitratoides Exilis*	Endangered G3	Endangered S1	-	-
Fringed myotis	*Myotis thysanodes*	G4	S4	-	Sensitive (BLM)
Giant kangaroo rat	*Dipodomys ingens*	Endangered G2	Endangered S2	Fully Protected	-
Long-eared myotis	*Myotis evotis*	G5	S4?	-	Sensitive (BLM)
Long-legged myotis	*Myotis volans*	G5	S4?	-	-
Nelson's antelope squirrel	*Ammospermophilus nelsoni*	G2	Threatened S2	-	-
Pacific Fisher	*Martes Pennanti Pacifica*	Candidate G5	S2	SC	Sensitive (BLM, FS)
Pallid bat	*Antrozous pallidus*	G5	S3	SC	Sensitive (BLM, FS)
San Joaquin Kit Fox	*Vulpes Macrotis Mutica*	Endangered G4	Threatened S2	-	-
San Joaquin Pocket Mouse	*Perognathus Inornatus Inornatus*	G4	S2	-	Sensitive (BLM)
Short-nosed kangaroo rat	*Dipodomys ntratoides brevinasus*	G3	S1	SC	Sensitive (BLM)
Sierra Marten	*Martes Americana sierrae*	G5	S2	-	Sensitive (FS)
Sierra Nevada red fox	*Vulpes vulpes necator*	G5	Threatened S1	-	Sensitive (FS)
Spotted bat	*Euderma maculatum*	G4	S2	SC	Sensitive (BLM)
Townsends's big-eared bat	*Corynorhinus townsendii*	G4	S2	SC	Sensitive (FS, BLM)
Tulare grasshopper mouse	*Onychomys torridus tularensis*	G5	S1	SC	Sensitive (BLM)
Western mastiff bat	*Eumops perotis californicus*	G5	S3	SC	Sensitive (BLM)
Western small-footed myotis	*Myotis ciliolabrum*	G5	S2	-	Sensitive (BLM)
Yuma myotis	*Myotis yumanensis*	G5	S4?	-	Sensitive (BLM)
Insects					
None	*Calasellus longus*	G1	S1	-	-
	Calicina dimorphica	G1	S1	-	-
	Calicina macula	G1	S1	-	-
Antioch efferian robbefly	*Efferia antiochi*	G1	S1	-	-
Ciervo aegilian scarab beetle	*Aegialia concinna*	G1	S1	-	-
Dry Creek cliff strider bug	*Oravelia pege*	G1	S1	-	-

Common Name	Scientific Name	Global Ranking	State Ranking	CDFG	Other
Hopping's blister beetle	*Lytta hoppingi*	G1	S1	-	-
Hurd's metapogon robberfly	*Metapogon hurdi*	G1	S1	-	-
Midvalley fairy shrimp	*Branchinecta mesovallensis*	G2	S2	-	-
Molestan blister beetle	*Lytta molesta*	G2	S2	-	-
Morrison's blister beetle	*Lytta morrisoni*	G1	S1	-	-
Piedra harvestmen	*Calicina piedra*	G1	S1	-	-
Redheaded sphecid wasp	*Eucerceris ruficeps*	G1	S1	-	-
San Joaquin dune beetle	*Coleus gracilis*	G1	S1	-	Sensitive (BLM)
Table Mountain harvestmen	*Calicina mesaensis*	G1	S1	-	-
Tight coin (Yate's snail)	*Ammonitella yatesi*	G1	S1	-	-
Vernal pool fairy shrimp	*Branchinecta lynchi*	Threatened G2	S2	-	-
Vernal pool tadpole shrimp	*Lepidurus packardi*	Endangered G2	S2	-	-
Valley elderberry longhorn beetle	*Desmocerys californicus dimorphus*	Threatened G3	S2	-	-
Wooly hydroporus diving beetle	*hydroporus hirsutus*	G1	S1	-	-

Key:

?	USFWS or CDFG does not have enough data to determine status.
BCC	Birds of Conservation Concern by the Fish and Wildlife Service
BLM	Bureau of Land Management
CDF	California Department of Forestry and Fire Protection
FS	USDA Forest Service
FWS	Fish and Wildlife Service
SC	Species of Special Concern
Global Ranking	
Endangered	Listed as "endangered" under Federal Endangered Species Act. Species faces possible extinction throughout all, or a significant portion of, its range.
Threatened	Although species is not presently at risk of extinction, it is likely to become an endangered species in the foreseeable future in the absence of special protection and management efforts.
G1 =	Less than 6 viable element occurrences (EOs) OR less than 1,000 individuals OR less than 2,000 acres.
G2 =	6-20 EOs OR 3,000-10,000 individuals OR 2,000-10,000 acres
G3 =	21-100 EOs OR 3,000-10,000 individuals OR 10,000-50,000 acres
G4 =	Apparently secure; this rank is clearly lower than G3 but factors exist to cause some concern; i.e., there is some threat, or somewhat narrow habitat.
G5 =	Population or stand demonstrably secure to ineradicable due to being commonly found in the world.
State Ranking	
S1 =	Less than 6 EOs OR less than 1,000 individuals OR less than 2,000 acres
S2 =	6-20 EOs OR 1,000-3,000 individuals OR 2,000-10,000 acres
S3 =	21-100 EOs or 3,000-10,000 individuals OR 10,000-50,000 acres

Source: California Department of Fish and Game, Natural Heritage Division, Natural Diversity DataBase, March 2006 and November 2009.

Methodology

The impact assessment for biotics focuses on potential effects that the Project might have on special status plants, animals and habitats. The assessment is not site or project-specific but is a regional analysis.

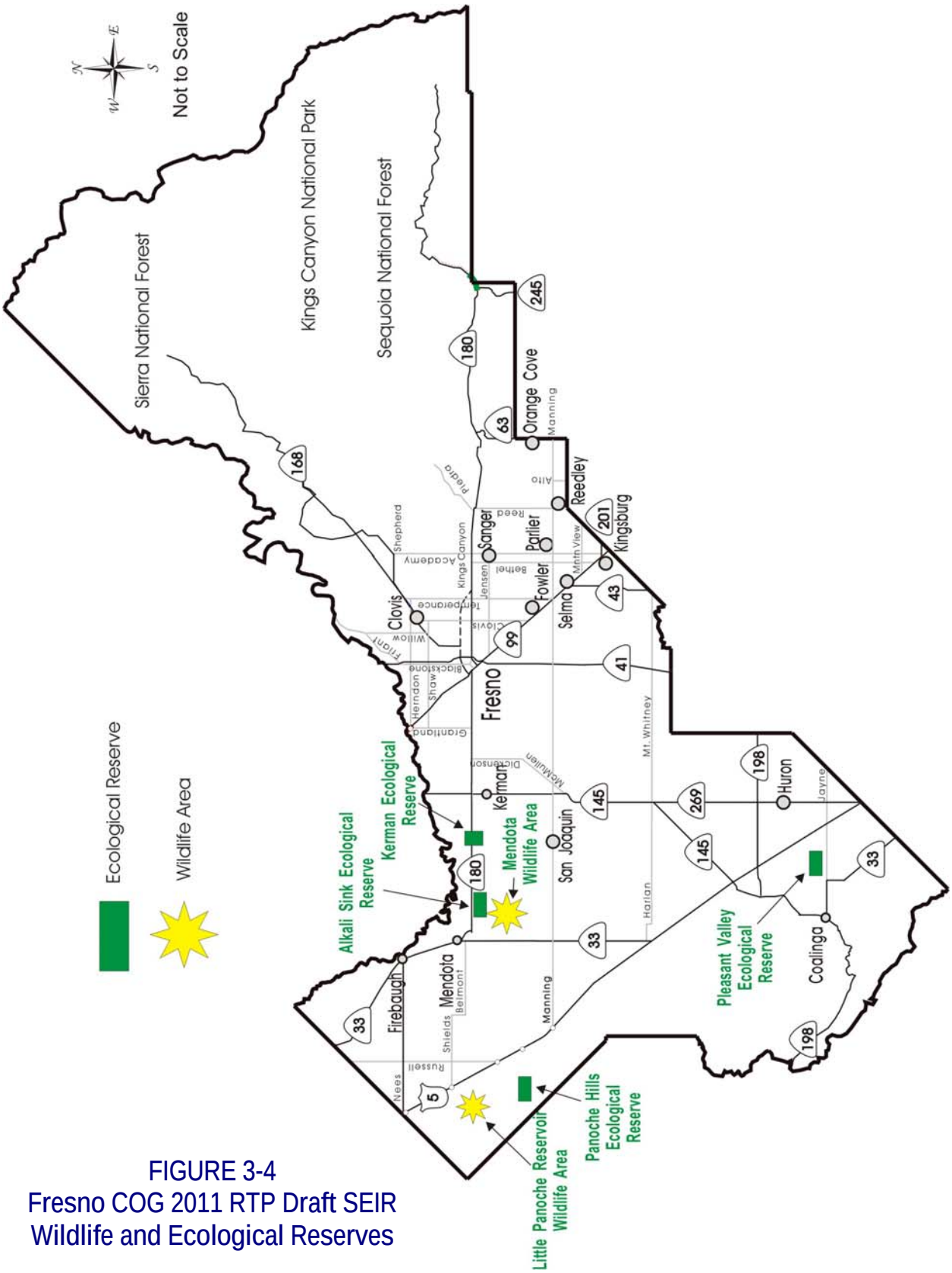


FIGURE 3-4
Fresno COG 2011 RTP Draft SEIR
Wildlife and Ecological Reserves

Environmental Impacts, Mitigation Measures, and Significance After Mitigation

To determine the actual potential for significant impacts on biotics resulting from implementation of transportation improvements, 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 special habitat, or habitat of special animals or plants, 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 Project 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 areas that 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. Project construction could affect these uses if not mitigated.

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 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.

Criteria for Significance

The CEQA Guidelines establish that a significant impact would be expected to occur if the project would:

- Impact species of special status or special concern.
- Impact riparian or sensitive habitat.
- Impact federally protected wetlands.
- Impact native resident or migratory wildlife or wildlife areas.
- Conflict with local, state, regional or federal conservation or preservation plans.

Impact 3.4.1 – Removal or Degradation of Sensitive Natural Communities

The RTP includes 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 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. Fresno COG will be provided with documentation indicating compliance with mitigation measures.

- When applicable to federally funded projects, Fresno COG and responsible agencies should commit to improved interagency coordination and integration of the National Environmental Policy Act (NEPA) and the Clean Water Act Section 404 procedures during three stages: transportation planning, project programming, and project implementation. Fresno COG and affected state and local agencies should commit to ensuring the earliest possible consideration of environmental concerns pertaining to U.S. water bodies, including wetlands, at each of the three stages identified above. In addition, the agencies should place a high priority on the avoidance of adverse impacts to waters of the U.S. and associated sensitive species, including threatened and endangered species. Implementation of NEPA-404 requirements will expedite construction of necessary transportation projects, with benefits to mobility and the economy at large. The process will also enable more street and highway projects to proceed on budget and on schedule. Finally, the process will improve cooperation and efficiency of governmental operations at all levels, thereby better serving the public.

- 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.

- 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 habitats, 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 Project, impacts to these resources would remain a potentially significant impact at a regional level.

Impact 3.4.2 – Direct Impacts on Rare, Threatened, or Endangered Plant & Wildlife Species

The RTP includes projects 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 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. Fresno COG will be provided with documentation indicating compliance with mitigation measures.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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 3.4.3 – Impacts on Rare, Threatened, or Endangered Species from Project Noise, Lighting and Deterrents

The Project 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 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. Fresno COG will be provided with documentation indicating 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 potentially significant at a regional level.

Impact 3.4.4 - Temporary and Permanent Impacts to Terrestrial and Aquatic Wildlife Movement

The Project 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, 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 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. Fresno COG will be provided with documentation indicating 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 individual 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 potentially significant at a regional level.

Impact 3.4.5 – Conflicts with an Adopted Habitat Conservation Plan

The Project could potentially conflict with an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Planning (NCCP) program or other approved local, regional or state HCP.

Mitigation Measures

All mitigation measures will be included in subsequent 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. Fresno COG will be provided with documentation indicating compliance with mitigation measures.

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

Significance After Mitigation

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

Impact 3.3.6 – Siltation Impacts

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

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

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

This impact would be significant.

Mitigation Measures

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

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

Significance After Mitigation

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

Cumulative Impacts 3.3.6

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

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

The amount of new developed acreage (consuming previously vacant land) would be considerable. This degree of development is reasonably foreseeable; however, to assign this future development to precise locations would be speculative, such that it cannot be estimated which natural vegetation communities would be affected. Despite the inability to predict the acreage of each habitat type that may be affected, it is reasonable to expect that this future development would contribute to the same types (although on a larger scale) of impacts detailed in Impacts 3.3.1 through 3.3.5 above.

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

Mitigation Measures

The cumulative impacts to biological resources, due to the forecast urban development associated with the 2011 RTP, would be mitigated using the same measures detailed for Impacts 3.3.1 through 3.3.5, in addition to the following measure.

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

Significance After Mitigation

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

3.5 CLIMATE CHANGE

This section includes a discussion of global climate change, its causes and the contribution of human activities, as well as a summary of existing greenhouse gas emissions. This section also describes the criteria for determining the significance of climate change impacts, and estimates the likely greenhouse gas emissions that would result from vehicular traffic and other emission sources related to the Project. Where appropriate, mitigation measures are recommended to reduce project-related impacts.

Climate refers to any significant change in measures of climate (such as temperature, precipitation, or wind) lasting for an extended period (decades or longer). Global Climate Change (GCC) means shift in the climate of the earth as a whole. It does occur naturally as in the case of the ice age. According to CARB, the climate change that is occurring today differs from previous climate changes in both time and scale.

Gases that catch heat in the atmosphere are regularly called greenhouse gases (GHG's). The Earth's surface temperature would be about 61 degrees Fahrenheit colder than it is currently if it were not for the innate heat trapping effect of GHG's. The buildup of these gases in the earth's atmosphere is considered the source of the observed increase in the earth's temperature (global warming). Some greenhouse gases such as carbon dioxide occur naturally in nature and are emitted to the atmosphere through natural processes and as well as anthropocentric activities. Other GHG's (e.g., fluorinated gases) are created and emitted solely through human activities.

Since the Industrial Revolution (approximately 1750), global concentrations of carbon dioxide (CO2) have risen about 36%, chiefly due to the burning of fossil fuels. Questions remain about the amount of warming that will occur, how fast it will occur, and how the warming will affect the rest of the climate system including weather events.

The United Nations Intergovernmental Panel on Climate Change constructed several emission trajectories of GHGs needed to stabilize global temperatures and climate change impacts. The Panel concluded that a stabilization of GHGs at 400 to 450 parts per million (ppm) CO_2 equivalent concentration is required to keep global mean warming below 3.6º Fahrenheit (2º Celsius). This is presumed necessary to avoid dangerous climate change (Association of Environmental Professionals, 2007).

State law defines greenhouse gases as any of the following compounds: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur hexafluoride (SF_6) (California Health and Safety Code Section 38505(g).) CO_2, followed by CH_4 and N_2O, are the most common GHGs that result from human activity. The characteristics of state defined GHGs are described below:

- Carbon dioxide – CO_2 results from fossil fuel combustion in stationary and mobile sources. It contributes to the greenhouse effect, but not to stratospheric ozone depletion. In 2004, CO_2 accounted for approximately 84 percent of total GHG emissions in the state (CEC, 2006);

- Methane – CH4 can also be divided into anthropogenic (i.e., resulting from human activities and/or processes) and natural sources. Anthropogenic sources include rice agriculture, livestock, landfills, and waste treatment, some biomass burning, and fossil fuel combustion. Natural sources are wetlands, oceans, forests, fire, termites and geological sources. Anthropogenic sources currently account for more than 60 percent of the total global emissions; and

- Other regulated GHGs include Nitrous Oxide (N_20), Sulfur Hexafluoride (S_6), Hydrofluorocarbons (HFC), and Perfluorocarbons (PFC) - These gases all possess heat-trapping characteristics that are greater than CO_2. Emission sources of nitrous oxide gases include, but are not limited to, waste combustion, waste water treatment, fossil fuel combustion, and fertilizer production. Because the volume of emissions is small, the net

effect of nitrous oxide emissions relative to CO_2 or CH4 is relatively small. SF6, HFC, and PFC emissions occur at even lower rates.

Over the last 200 years, human activities have caused substantial quantities of GHGs to be released into the atmosphere. These extra emissions are increasing GHG concentrations in the atmosphere, and enhancing the natural greenhouse effect, which is believed to be causing global warming. While manmade GHGs include naturally-occurring GHGs such as CO_2, methane, and N_2O, some gases, like HFCs, PFCs, and SF_6 are completely new to the atmosphere.

Certain other gases, such as water vapor, are short-lived in the atmosphere. Others remain in the atmosphere for significant periods of time, contributing to climate change in the long term. Water vapor is excluded from the list of GHGs because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation.

Globally, climate change has the potential to impact numerous environmental resources through potential, though uncertain, impacts related to future air temperatures and precipitation patterns. Scientific modeling predicts that continued GHG at or above current rates would induce more extreme climate changes during the 21st century than were observed during the 20th century. A warming of about 0.2°C (0.36° Fahrenheit) per decade is projected, and there are identifiable signs that global warming is taking place, including substantial ice loss in the Arctic.

However, the understanding of GHG emissions, particulate matter, and aerosols on global climate trends remains uncertain. In addition to uncertainties about the extent to which human activity rather than solar or volcanic activity is responsible for increasing warming, there is also evidence that some human activity has cooling, rather than warming, effects, as discussed in detail in numerous publications by the International Panel on Climate Change (IPCC), namely “Climate Change 2001, The Scientific Basis”(2001).

Climate change modeling shows that further warming could occur, which would induce additional changes in the global climate system during the current century. Changes to the global climate system, ecosystems, and the environment of California could include, but are not limited to:

GHGs have the potential to affect the environment because such emissions are believed to cumulatively contribute to global climate change. Although GHG emissions from one single project will not by itself cause global climate change, it is thought that GHG emissions from multiple projects, past, present and future throughout the world may collectively result in a cumulative impact with respect to global climate change. It is speculated that global climate change could contribute to rising sea levels, which can inundate low-lying areas; impact rainfall and snowfall, which could change water supply, affect habitat which could affect biological resources, along with other unknown affects.

The consumption of nonrenewable energy (primarily gasoline and diesel fuel) associated with construction activities and the operation of passenger, public transit, and commercial vehicles results in GHG emissions that cause global climate change. In addition, alternative fuels like natural gas including CNG and liquid natural gas (LNG), ethanol, and electricity (unless derived from solar, wind, nuclear, or another energy source that does not produce carbon emissions) also result in GHG emissions and contribute to global climate change.

Climate models indicate that temperatures in California may rise by 4.7°F to 10.5°F by the end of the century if GHG emissions continue to proceed at a medium or high rate (CEC, 2006). Lower emission rates would reduce the projected warming to 3.0°F to 5.6° Fahrenheit. Almost all climate scenarios include a continuing trend of warming through the end of the century given the amounts of GHGs already released, and the difficulties associated with reducing emissions to a level that would stabilize the climate. Total GHG emissions in California have been approximated by CARB, which found that 468 MMT of CO_2E GHG emissions were produced in California in 2004.

CARB also found transportation to be the source of 38 percent of the state's GHG emissions; followed by electricity generation at 25 percent and industrial sources at 20 percent.

Global climate change is a problem caused by cumulative worldwide GHG emissions. Mitigating global climate change will require worldwide solutions. Combined gases in the earth's GHGs plays a critical role in the earth's radiation budget by trapping infrared radiation emitted from its surface, which otherwise could have escaped to space. Prominent GHGs contributing to this process include water vapor, carbon dioxide, methane, ozone, nitrous oxide, and certain fluorocarbons. This phenomenon, known as the "greenhouse effect", keeps the earth's atmosphere near the surface warmer than it would be under other circumstances. Increases in these gases leads to higher radiation absorption, thereby warming the lower atmosphere and increasing evaporation rates and temperatures near the surface.

Emissions of the GHGs in excess of natural ambient concentrations are thought to be responsible for enhancing the greenhouse effect and contribute to what is termed "global warming", or the unnatural warming of the earth's natural climate. Climate change is a global problem, and GHGs are global pollutants, unlike criteria air pollutants (such as ozone precursors). Worldwide, California is the 12th to 16th largest emitter of carbon dioxide (CO_2), according to the California Energy Commission (CEC), and is responsible for approximately 2% of the world's CO_2 emissions.

The Intergovernmental Panel on Climate Change (IPCC) was established by the World Meteorological Organization and United Nations Environment Programme to assess scientific, technical, and socioeconomic information to further understand climate change, its potential impacts, and options for adaptation and mitigation. The IPCC predicts substantial increases in temperatures globally of between 1.1 to 6.4 degrees Celsius, depending on the scenario studied. This may impact 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.
- Changes in the distribution of plant and wildlife species because of changes in temperature, competition from colonizing species, changes in hydrologic cycles, changes in sea levels, and other climate-related effects.
- Increase in the number of days conducive to ozone formation by 25 to 85 percent (depending on the future temperature scenario) in high ozone areas of Los Angeles and the San Joaquin Valley by the end of the 21st century.
- High potential for erosion of California's coastlines and seawater intrusion into the Delta and levee systems due to the rise in sea level.

Changes in California's climate and ecosystems are occurring at a time when the State's population is expected to increase from 34 to 59 million by 2040, according to the CEC. 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 and nitrous oxide are byproducts of fossil fuel combustion, among other sources. Methane, a highly potent GHG, results from off-gassing associated with agricultural practices and landfills, among other sources. Sinks of carbon dioxide include uptake by vegetation and dissolution into the ocean.

The State of California GHG Inventory performed by the CARB compiled statewide human sources of GHG emissions. It includes estimates for CO_2, CH_4, N_2O, SF_6, HFCs, and PFCs. The current inventory covers the years 1990 to 2004, and is summarized in Table 3-10. When accounting for GHGs, all types of GHG emissions are expressed in terms of CO_2 equivalents (CO_2E) and are typically quantified in metric tons (MT) or millions of metric tons (MMT). Data sources used to calculate this GHG inventory include California and federal agencies, international organizations, and industry associations. The calculation methodologies are consistent with guidance from the Intergovernmental Panel on Climate Change (IPCC). The 1990 emissions level is the sum total of sources from all sectors and categories in the inventory. The inventory is divided into seven broad sectors and categories in the inventory. These sectors include: Agriculture; Commercial; Electricity Generation; Forestry; Industrial; Residential; and Transportation.

TABLE 3-10
State of California GHG Emissions By Sector[1]

SECTOR	TOTAL 1990 EMISSIONS (MMT CO_2E[2])	PERCENT OF TOTAL 1990 EMISSIONS	TOTAL 2004 EMISSIONS (MMTCO_2E)	PERCENT OF TOTAL 2004 EMISSIONS
Agriculture	23.4	5%	27.9	6%
Commercial	14.4	3%	12.8	3%
Electricity Generation	110.6	26%	119.8	25%
Forestry	0.2	<1%	0.2	<1%
Industrial	103.0	24%	96.2	20%
Residential	29.7	7%	29.1	6%
Transportation	150.7	35%	182.4	38%
Forestry Sinks (Absorption)	(6.7)		(4.7)	
Total	432	100%	468	100%

[1]Source: Staff Report – California 1990 Greenhouse Gas Emissions Level and 2020 Emissions Limit, California Air Resources Board, November 16, 2007.
[2]MMT CO_2E refers to million metric tons of CO_2 equivalent emissions.

Regulatory

Federal

In 1988, the United Nations established the Intergovernmental Panel on Climate Change to assess the impacts of global warming and to develop strategies that nations could apply to curb global climate change. In 1992, the United

States joined other countries around the world in signing the United Nations' Framework Convention on Climate Change accord with the goal of controlling greenhouse gas emissions.

The Climate Change Action Plan was developed as a result to address the reduction of greenhouse gases in the United States. The plan is comprised of more than 50 voluntary programs. Additionally, the Montreal Protocol was first signed in 1987 and considerably amended in 1990 and 1992. The Montreal Protocol instructs that the production and consumption of compounds that deplete ozone in the stratosphere--chlorofluorocarbons (CFCs), halons, carbon tetrachloride, and methyl chloroform--were to be phased out by 2000 (2005 for methyl chloroform).

Recently, in *Massachusetts v. EPA* (April 2, 2007), the U.S. Supreme Court held that GHG's fall within the Clean Air Act's definition of an "air pollutant" and directed the EPA to deem whether GHG's are affecting climate change. The EPA must regulate GHG emissions from automobiles under the Clean Air Act if it is determined GHG's do affect climate change. Currently, the EPA has not yet begun rule-making proceedings to judge whether GHG's are contributing to climate change. In addition, Congress has enlarged the corporate average fuel economy (CAFE´) of the U.S. automotive fleet. In December 2007, President Bush signed a bill increasing the minimum average miles per gallon for cars, sport utility vehicles and light trucks to 35 miles per gallon by 2020. This rise in CAFE´ standard will result in a significant reduction in GHG emissions from automobiles, which are the largest single emitting GHG group in California.

On April 17, 2009, EPA issued its proposed endangerment finding for GHG emissions. EPA is proposing to find that greenhouse gases in the atmosphere endanger the public health and welfare of current and future generations. Concentrations of greenhouse gases are at unprecedented levels compared to the recent and distant past. EPA has stated that these high atmospheric levels are the unambiguous result of human emissions, and are very likely the cause of the observed increase in average temperatures and other climatic changes. The effects of climate change observed to date and projected to occur in the future – including but not limited to the increased likelihood of more frequent and intense heat waves, more wildfires, degraded air quality, more heavy downpours and flooding, increased drought, greater sea level rise, more intense storms, harm to water resources, harm to agriculture, and harm to wildlife and ecosystems – are effects on public health and welfare within the meaning of the CAA.

The U.S. EPA annually publishes the *Inventory of U.S. Greenhouse Gas Emissions and Sinks* for estimating sources of GHGs that is generally consistent with the IPCC methodology developed in its *Guidelines for National Greenhouse Gas Inventories*.

- Energy Policy and Conservation Act
  The Energy Policy and Conservation Act of 1975 sought to ensure that all vehicles sold in the U.S. would meet certain fuel economy goals. Through this Act, Congress established the first fuel economy standards for on-road motor vehicle in the U.S. Pursuant to the Act, the National Highway Traffic and Safety Administration, which is part of the USDOT, is responsible for establishing additional vehicle standards and for revising existing standards.

State

Various statewide and local initiatives to reduce California's contribution to GHG emissions have raised awareness that, even though the various contributors to and consequences of global climate change are not yet fully understood, global climate change is occurring. Every nation emits GHGs; therefore, global cooperation will be required to reduce the rate of GHG emissions. There are currently no state regulations in California that establish ambient air quality standards for GHGs. However, the state of California has passed legislation directing CARB to develop actions to reduce GHG emissions.

- Assembly Bill 1493 (Pavley)

California Assembly Bill 1493 (Pavley) enacted on July 22, 2002, required the CARB to develop and adopt regulations that reduce greenhouse gases emitted by passenger vehicles and light duty trucks. Regulations adopted by ARB would apply to 2009 and later model year vehicles. CARB estimated that the regulation would reduce climate change emissions from light duty passenger vehicle fleet by an estimated 18% in 2020 and by 27% in 2030 (AEP 2007). In 2005, the CARB requested a waiver from EPA to enforce the regulation, as required under the Clean Air Act. Despite the fact that no waiver had ever been denied over a 40-year-period, the then Administrator of the EPA sent Governor Schwarzenegger a letter in December, 2007, indicating he had denied the waiver. On March 6, 2008 the waiver denial was formally issued in the Federal Register. Governor Schwarzenegger and several other states immediately filed suit against the federal government to reverse that decision. On January 21, 2009, CARB requested that EPA reconsider denial of the waiver. EPA scheduled a re-hearing on March 5, 2009 and is considering the case.

- Executive Order S-3-05

Governor Schwarzenegger established Executive Order S-3-05 in 2005. This Executive Order set forth a series of target dates by which statewide emissions of GHGs would be progressively reduced, as follows:

- By 2010, reduce GHG emissions to 2000 levels.
- By 2020, reduce GHG emissions to 1990 levels.
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

The executive order directed the secretary of the California Environmental Protection Agency (Cal/EPA) to coordinate a multi-agency effort to reduce GHG emissions to the target levels. The secretary will also submit biannual reports to the governor and California Legislature describing the progress made toward the emissions targets, the impacts of global climate change on California's resources, and mitigation and adaptation plans to combat these impacts. To comply with the executive order, the secretary of Cal/EPA created the CAT, made up of members from various state agencies and commissions. The team released its first report in March 2006. The report proposed to achieve the targets by building on the voluntary actions of California businesses, local governments, and communities and through state incentive and regulatory programs.

- Assembly Bill 32 (California Global Warming Solutions Act of 2006)

California passed the California Global Warming Solutions Act of 2006 (AB 32; California Health and Safety Code Division 25.5, Sections 38500 - 38599). AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and establishes a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. This reduction will be accomplished by enforcing a statewide cap on GHG emissions that will be phased in starting in 2012. To effectively implement the cap, AB 32 directs CARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles. However, AB 32 also includes language stating that if the AB 1493 regulations cannot be implemented, then CARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

AB 32 requires CARB to adopt a quantified cap on GHG emissions representing 1990 emissions levels and disclose how it arrived at the cap; institute a schedule to meet the emissions cap; and develop tracking,

reporting, and enforcement mechanisms to ensure that the state reduces GHG emissions enough to meet the cap. AB 32 also includes guidance on instituting emissions reductions in an economically efficient manner, along with conditions to ensure that businesses and consumers are not unfairly affected by the reductions. Using these criteria to reduce statewide GHG emissions to 1990 levels by 2020 would represent an approximate 25 to 30 percent reduction in current emissions levels. However, CARB has discretionary authority to seek greater reductions in more significant and growing GHG sectors, such as transportation, as compared to other sectors that are not anticipated to significantly increase emissions. Under AB 32, CARB must adopt regulations by January 1, 2011 to achieve reductions in GHGs to meet the 1990 emission cap by 2020.

- Executive Order S-1-07

Executive Order S-1-07, which was signed by Governor Schwarzenegger in 2007, proclaims that the transportation sector is the main source of GHG emissions in California, generating more than 40 percent of statewide emissions. It establishes a goal to reduce the carbon intensity of transportation fuels sold in California by at least ten percent by 2020. This order also directs CARB to determine whether this Low Carbon Fuel Standard (LCFS) could be adopted as a discrete early-action measure as part of the effort to meet the mandates in AB 32. On April 23, 2009 CARB approved the proposed regulation to implement the LCFS. The LCFS will reduce GHG emissions from the transportation sector in California by about 16 MMT in 2020. The LCFS is designed to reduce California's dependence on petroleum, create a lasting market for clean transportation technology, and stimulate the production and use of alternative, low-carbon fuels in California. The LCFS is designed to provide a durable framework that uses market mechanisms to spur the steady introduction of lower carbon fuels. The framework establishes performance standards that fuel producers and importers must meet each year beginning in 2011. One standard is established for gasoline and the alternative fuels that can replace it. A second similar standard is set for diesel fuel and its replacements.

The standards are "back-loaded"; that is, there are more reductions required in the last five years, than the first five years. This schedule allows for the development of advanced fuels that are lower in carbon than today's fuels and the market penetration of plug-in hybrid electric vehicles, battery electric vehicles, fuel cell vehicles, and flexible fuel vehicles. It is anticipated that compliance with the LCFS will be based on a combination of strategies involving lower carbon fuels and more efficient, advanced-technology vehicles.

- Senate Bill 97

SB 97, signed August 2007 (Chapter 185, Statutes of 2007; PRC Sections 21083.05 and 21097), acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA. This bill directs the Governor's Office of Planning and Research (OPR).which is part of the state Resources Agency, to prepare, develop, and transmit to CARB guidelines for the feasible mitigation of GHG emissions (or the effects of GHG emissions), as required by CEQA, by July 1, 2009. The Resources Agency is required to certify and adopt those guidelines by January 1, 2010. SB 97 also removes, both retroactively and prospectively, the legitimacy of litigation alleging inadequate CEQA analysis of effects of GHG emissions in the environmental review of projects funded by the Highway Safety, Traffic Reduction, Air Quality and Port Security Bond Act of 2006 or the Disaster Preparedness and Flood Protection Bond Act of 2006 (Proposition 1B or 1E). This provision will be repealed by operation of law on January 1, 2010; at that time, any such projects that remain unapproved will no longer be protected against litigation claims of failure to adequately address climate change issues. In the future, this bill will only protect a handful of public agencies from CEQA challenges on certain types of projects, and only for a few years time.

As set forth more fully below, in June 2008, OPR published a technical advisory recommending that CEQA lead agencies make a good-faith effort to estimate the quantity of GHG emissions that would be generated by a proposed Project. Specifically, based on available information, CEQA lead agencies should estimate the

emissions associated with project-related vehicular traffic, energy consumption, water usage, and construction activities to determine whether project-level or cumulative impacts could occur, and should mitigate the impacts where feasible (Governor's Office of Planning and Research, 2008*)*. OPR requested CARB technical staff to recommend a method for setting CEQA thresholds of significance, as described in Section 15064.7 of the CEQA Guidelines, which will encourage consistency and uniformity in the CEQA analysis of GHG emissions throughout the state.

- Senate Bill 375

SB 375, signed in September 2008 (Chapter 728, Statutes of 2008), aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a sustainable communities strategy (SCS) or alternative planning strategy (APS) that will prescribe land use allocation in that MPOs regional transportation plan. CARB, in consultation with MPOs, will provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. CARB is also charged with reviewing each MPO's SCS or APS for consistency with its assigned targets. If MPOs do not meet the GHG reduction targets, transportation projects may not be eligible for funding programmed after January 1, 2012.

This law also extends the minimum time period for the regional housing needs allocation cycle from five years to eight years for local governments located within an MPO that meets certain requirements. City or county land use policies (including general plans) are not required to be consistent with the regional transportation plan (and associated SCS or APS). However, new provisions of CEQA would incentivize (through streamlining and other provisions) qualified projects that are consistent with an approved SCS or APS, categorized as "transit priority projects."

- California Climate Action Registry General Reporting Protocol

The California Climate Action Registry (CCAR) was established in 2001 by SB 1771 and SB 527 (Chapter 1018, Statutes of 2000, and Chapter 769, Statutes of 2001, respectively) as a nonprofit voluntary registry for GHG emissions. The purpose of the CCAR is to help companies and organizations with operations in the state to establish GHG emissions baselines against which any future GHG emissions reduction requirements may be applied. CCAR has developed a general protocol and additional industry-specific protocols that provide guidance on how to inventory GHG emissions for participation in the registry.

This protocol provides the principles, approach, methodology, and procedures required for participation in CCAR. It is designed to support the complete, transparent, and accurate reporting of an organization's GHG emissions inventory in a fashion that minimizes the reporting burden and maximizes the benefits associated with understanding the connection between fossil fuel consumption, electricity use, and GHG emissions in a quantifiable manner. The most updated version of this protocol was prepared in April 2008. All cabinet-level state agencies and departments have joined the CCAR. Membership in the CCAR means that all members of the Governor's Cabinet will be reporting their GHG emissions on a yearly basis.

- California Code of Regulations Title 24

Although not originally intended to reduce greenhouse gas emissions, California Code of Regulations Title 24 Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. The GHG emission inventory was based on Title 24 standards as of October 2005; however, Title 24 has been updated as of 2008 and standards are set to be phased in summer 2009. Energy efficient buildings require less electricity, natural gas, and other fuels. Electricity production from fossil fuels and on-site fuel combustion (typically for water heating) results in greenhouse gas emissions. Therefore, increased energy efficiency results in decreased greenhouse gas emissions.

- CAPCOA January 2008 CEQA and Climate Change White Paper

In January 2008, the California Air Pollution Control Officers Association (CAPCOA) issued a "white paper" on evaluating GHG emissions under CEQA. The CAPCOA white paper strategies are not guidelines and have not been adopted by any regulatory agency; rather, the paper is offered as a resource to assist lead agencies in considering climate change in environmental documents.

The CAPCOA white paper addresses what constitutes new emissions, how baseline emissions should be established, what should be considered cumulatively considerable under CEQA, what a business as usual (BAU) scenario means, and whether an analysis should include life-cycle emissions.

The CAPCOA white paper contains a Climate Change Significance Criteria Flow Chart that proposes a tiered approach to determining significance under CEQA. The flow chart would consider a proposed plan's impact to be less than significant if a General Plan for the project area exists that is in compliance with AB 32 (showing that GHG emissions for 2020 would be less than 1990 emissions for the plan area). The flow chart would consider a proposed Project's impact to be significant unless one of the following can be demonstrated:

- The project is exempt under SB 97.
- The project is on the "Green List".
- A General Plan for the project area exists that is in compliance with AB 32.
- GHG emissions are analyzed and mitigated to less-than-significant.

The CAPCOA white paper considers GHG impacts to be exclusively cumulative impacts.

- CARB Climate Change proposed Scoping Plan

On December 11, 2008, CARB adopted its Scoping Plan, which functions as a roadmap of CARB's plans to achieve GHG reductions in California required by AB 32 through subsequently enacted regulations. CARB has estimated that the 1990 GHG emissions level was 427 MMT net CO_2e (CARB 2007b). CARB estimates that a reduction of 173 MMT net CO_2e emissions below BAU would be required by 2020 to meet the 1990 levels (CARB, 2007b). This amounts to a 15 percent reduction from today's levels, and a 30 percent reduction from projected BAU levels in 2020 (CARB, 2008a).

CARB's Scoping Plan calculates 2020 BAU emissions as those expected to occur in the absence of any GHG reduction measures. The 2020 BAU emissions estimate was derived by projecting emissions from a past baseline year using growth factors specific to each of the different economic sectors, i.e. transportation, electrical power, commercial and residential, industrial etc. CARB used three-year average emissions, by sector, for 2002-2004 to forecast emissions to 2020. At the time CARB's Scoping Plan process was initiated, 2004 was

the most recent year for which actual data was available. The measures described in CARB's Scoping Plan are intended to reduce the projected 2020 BAU to 1990 levels, as required by AB 32. CARB's Scoping Plan also breaks down the amount of GHG emissions reductions CARB recommends for each emissions sector of the state's GHG inventory. CARB's Scoping Plan calls for the largest reductions in GHG emissions to be achieved by implementing the following measures and standards:

- Improved emissions standards for light-duty vehicles (estimated reductions of 31.7 MMT CO_2E).
- The LCFS (15.0 MMT CO_2E).
- Energy efficiency measures in buildings and appliances, and the widespread development of combined heat and power systems (26.3 MMT CO_2E).
- A renewable portfolio standard for electricity production (21.3 MMT CO_2E). CARB has identified a GHG reduction target of 5 MMT (of the 174 MMT total) for local land use changes (Table 2 of CARB's Scoping Plan), by Implementation of Reduction Strategy T-3 regarding Regional Transportation-Related GHG Targets. Additional land use reductions may be achieved as SB 375 is implemented. CARB's Scoping Plan states that successful implementation of the plan relies on local governments' land use, planning, and urban growth decisions because local governments have primary authority to plan, zone, approve, and permit land development to accommodate population growth and the changing needs of their jurisdictions. CARB further acknowledges that decisions on how land is used will have large effects on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emission sectors. CARB's Scoping Plan does not include any direct discussion about GHG emissions generated by construction activity. The measures approved by the Board will be developed over the next two years and be in place by 2012. CARB's Scoping Plan expands the list of nine Discrete Early Action Measures to a list of 39 Recommended Actions contained in Appendices C and E of CARB's Scoping Plan.

- OPR June 2008 Technical Advisory on CEQA and Climate Change

SB 97 directs the Governor's Office of Planning and Research (OPR) to develop guidelines for the mitigation of GHG emissions or the effects of GHG emissions under CEQA. OPR is required to prepare and transmit these guidelines by July 1, 2009 for certification and adoption by January 1, 2010. In the interim, a June 2008 Technical Advisory provides informal guidance for public agencies as they address the issue of climate change in their CEQA documents. The June 2008 Technical Advisory offers recommendations for identifying GHG emissions, determining significance under CEQA, and mitigating impacts.

The June 2008 OPR Advisory states that lead agencies under CEQA should develop their own approach to performing a climate change analysis for projects that generate GHG emissions. The June 2008 OPR Advisory also states that the lead agency should assess whether project emissions are individually or cumulatively significant, and implement strategies to avoid, reduce, or otherwise mitigate the impacts of those emissions when impacts are potentially significant. However, CARB's subsequently released draft thresholds acknowledge that the GHG analysis be on a cumulative basis as GHG is a global phenomena.

Regional agencies can attempt to reduce GHG emissions through their planning processes. For example, regional transportation planning agencies can adopt plans and programs that address congestion relief and reduce VMT.

In April 2009, OPR published its proposed revisions to CEQA to address GHG emissions. The amendments to CEQA indicate the following:

- Climate action plans and other greenhouse gas reduction plans can be used to determine whether a project has significant impacts, based upon its compliance with the plan.

- Local governments are encouraged to quantify the greenhouse gas emissions of proposed projects, noting that they have the freedom to select the models and methodologies that best meet their needs and circumstances. The section also recommends consideration of several qualitative factors that may be used in the determination of significance, such as the extent to which the given project complies with state, regional, or local GHG reduction plans and policies. OPR does not set or dictate specific thresholds of significance. Consistent with existing CEQA Guidelines, OPR encourages local governments to develop and publish their own thresholds of significance for GHG impacts assessment.
- When creating their own thresholds of significance, local governments may consider the thresholds of significance adopted or recommended by other public agencies, or recommended by experts.
- New amendments include guidelines for determining methods to mitigate the effects of greenhouse gas emissions in Appendix F of the CEQA Guidelines.
- OPR is clear to state that "to qualify as mitigation, specific measures from an existing plan must be identified and incorporated into the project; general compliance with a plan, by itself, is not mitigation".
- OPR emphasizes the advantages of analyzing GHG impacts on an institutional, programmatic level. OPR therefore approves tiering of environmental analyses and highlights some benefits of such an approach.

EIRs must specifically consider a project's energy use and energy efficiency potential.

- OPR January 8, 2009 Preliminary Draft CEQA Guideline Amendments for GHG Emissions

In January 2009, OPR released preliminary proposed amendments to the *CEQA Guidelines* regarding GHG emissions. No significance threshold is included in the draft and the guidelines afford the customary deference provided to lead agencies in their analysis and methodologies. The introductory preface to the amendments recommends that CARB set state-wide thresholds of significance. CARB released draft thresholds, as referenced below. OPR emphasized the necessity of having a consistent threshold available to analyze projects, and the analyses should be performed based on the best available information. For example, if a lead agency determines that GHGs may be generated by a proposed Project, the agency is responsible for quantifying estimated GHG emissions by type and source. The preliminary draft guidelines provide the following recommendations for determining the significance of GHG emissions under draft section 15064.4:

a. The determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency consistent with the provisions in section 15064. A lead agency should make a good-faith effort, based on available information, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project. A lead agency shall have discretion to determine, in the context of a particular project, whether to:

    1. Use a model or methodology to quantify greenhouse gas emissions resulting from a project, and which model or methodology to use. The lead agency has discretion to select the model it considers most appropriate provided it supports its decision with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use; or

    2. Rely on a qualitative analysis or performance based standards.

b. A lead agency may consider the following when assessing the significance of impacts from greenhouse gas emissions on the environment:

    1. The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting.

2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.

3. The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. Such regulations or requirements must be adopted by the relevant public agency through a public review process and must include specific requirements that reduce or mitigate the project's incremental contribution of greenhouse gas emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

The proposed amendments reiterate that the analysis of GHG impacts is cumulative. Section 15130 (f) provides that an EIR shall analyze GHG emissions resulting from a proposed Project when the incremental contribution of those emissions may be cumulatively considerable. On April 13, 2009, OPR submitted its proposed amendments to the state *CEQA Guidelines* for GHG emissions to the Secretary for Natural Resources, as required by Senate Bill 97 (Chapter 185, 2007). The Natural Resources Agency will conduct formal rulemaking in 2009, prior to certifying and adopting the amendments, as required by Senate Bill 97. The draft guidelines are not scheduled to be adopted until 2010 and are prospective in application. Therefore, any new amendments addressing GHG emissions would not be applicable to the proposed Project.

- CARB Preliminary Draft Staff Proposal, October 2008

Separate from CARB's Scoping Plan approved in December 2008, CARB issued a Staff Proposal in October 2008, as its first step toward developing recommended statewide interim thresholds of significance for GHGs that may be adopted by local agencies for their own use. The proposal does not attempt to address every type of project that may be subject to CEQA, but instead focuses on common project types that, collectively, are responsible for substantial GHG emissions – specifically, industrial, residential, and commercial projects. CARB is developing thresholds in these sectors to advance climate objectives, streamline project review, and encourage consistency and uniformity in the CEQA analysis of GHG emissions throughout the state. These draft thresholds are under revision in response to voluminous comments received. Finalized thresholds are expected sometime in 2009.

CARB staff's objective in this proposal is to develop a threshold of significance that would require the vast majority (approximately 90 percent statewide) of GHG emissions from new industrial projects to be subject to CEQA's requirement to impose feasible mitigation. CARB believes this can be accomplished with a threshold that allows small projects to be considered insignificant. CARB staff used existing data for the industrial sector to derive a proposed hybrid threshold. The threshold consists of a quantitative threshold of 7,000 metric tons of CO_2E per year (MT/year CO_2E) for operational emissions (excluding transportation), and performance standards for construction and transportation emissions. These performance standards have not yet been developed.

Regional

- San Joaquin Valley Air Pollution Control District

To assist Lead Agencies, project proponents, permit applicants, and interested parties in assessing and reducing the impacts of project specific greenhouse gas emissions (GHG) on global climate change, the San Joaquin Valley Air Pollution Control District (District) has adopted the guidance: *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA* and the policy: *District Policy – Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency*. The guidance and policy rely on the use of performance based standards, otherwise known as Best Performance

Standards (BPS) to assess significance of project specific greenhouse gas emissions on global climate change during the environmental review process, as required by CEQA. Use of BPS is a method of streamlining the CEQA process of determining significance and is not a required emission reduction measure. Projects implementing BPS would be determined to have a less than cumulatively significant impact. Otherwise, demonstration of a 29 percent reduction in GHG emissions, from business-as-usual, is required to determine that a project would have a less than cumulatively significant impact. The guidance does not limit a lead agency's authority in establishing its own process and guidance for determining significance of project related impacts on global climate change.

Environmental Impacts, Mitigation Measures and Significance After Mitigation

Methodology

Climate change is a significant global cumulative impact that could also have a substantial effect on the natural environment of California and within Fresno County. The potential contribution of the 2011 RTP to this cumulative impact is discussed below.

State action on climate change is mandated by AB 32. Fresno COG, along with other regional planning agencies throughout the state, will be monitoring the progress of state agencies in developing approaches to address GHG emissions. As agreed-upon approaches for project-level CEQA analysis and for transportation planning are established, Fresno COG expects that climate change will be a key environmental consideration in future regional transportation planning. Both Fresno COG and responsible agencies implementing projects outlined in the 2011 RTP will be required to adhere to any future applicable mandatory regulations regarding global warming resulting from the passage of AB 32, but the exact character of such future implementing strategies is not known at this time.

While the cumulative significance of climate change has been established, in absence of established project-level significance thresholds, Fresno COG considers it speculative at this time to determine whether the GHG emissions related to transportation in Fresno County represents a considerable contribution to a significant cumulative impact. Fresno COG does find that implementation of the 2011 RTP is likely to reduce emissions relative to the No-Build Alternative because of increased funding for transit improvements and improved traffic levels of service.

Although the COGs do not have land use authority to implement more compact and energy efficient land use, or limit growth, the eight San Joaquin Valley Councils of Governments or County Transportation Commissions are working on a significant public outreach project called the San Joaquin Valley Blueprint, providing education on the effects urban sprawl. The process will ultimately identify a preferred land use scenario separate from the local government general plan process. Dependent upon the success of the educational effort now underway, the process could result in a vision for the San Joaquin Valley that is more energy efficient than historic growth trends in the region.

As previously indicated, neither CEQA nor the CEQA Guidelines mention or provide any methodology for analysis of "greenhouse gases," including CO_2, nor do they provide any significance thresholds. However, the air quality model used to predict emissions rates of the criteria pollutants (EMFAC) is capable of modeling the emissions of CO_2, and Fresno COG analyzed CO_2 emissions resulting from the Proposed Plan. Even though the total VMT increase, the proposed Plan results in a reduction in CO_2 emissions and would represent an improvement over the No Project Alternative as shown in Table 3-11. The improvement in operations compared to the No Project Alternative, particularly higher speed and reduced vehicle hours traveled (VHT), has a beneficial cumulative impact on CO_2 emissions due to improved traffic flow, resulting in more efficient vehicle operation, which is consistent with the results for the analysis of the other criteria pollutants. The Proposed Plan would result in a positive cumulative effect on the reduction of CO_2 levels and would not require mitigation.

TABLE 3-11
Future CO_2 Emissions (Tons Per Day in 000's)

Scenarios	CO_2
Project Alternative (2035)	24.68
Project Alt. Lower than No Build Alt.?	Yes
No-Build Alternative	24.70
Difference	0.02

The impact assessment for GHG emissions focuses on potential effects the Project might have on GHG emissions within the Fresno Region. The assessment is not site or individual improvement project-specific but is a regional analysis.

Criteria for Significance

As with any environmental impact, lead agencies must determine what constitutes a significant impact. In the absence of regulatory standards for GHG emissions or other scientific data to clearly define what constitutes a "significant impact", individual lead agencies may undertake a project-by-project analysis, consistent with available guidance and current CEQA practice. The potential effects of a project may be individually limited but cumulatively significant. Lead agencies should not dismiss a proposed project's direct and/or indirect climate change impacts without careful consideration, supported by substantial evidence. Although climate change is ultimately a cumulative impact, not every individual project that emits GHGs must necessarily be found to contribute to a significant cumulative impact on the environment. CEQA authorizes reliance on previously approved plans and mitigation programs that have adequately analyzed and mitigated GHG emissions to a less than significant level as a means to avoid or substantially reduce the cumulative impact of a project, encourages reliance on other Environmental Impact Reports that discuss greenhouse gases, and tiering from them. The preliminary draft amendments OPR issued included an introduction letter in which OPR indicated that OPR intends to rely on CARB to recommend a method for setting significance thresholds.

Global Warming

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

Based upon the findings described in Table 3-11, Fresno COG finds that 2011 RTP would not result in increased CO_2 impacts compared to those in the No Build Alternative or to those disclosed in the 2007 RTP EIR 19.9 (000s) tons per day.

Impact 3.5.1 - Increased Transportation GHG Emissions May Cause Climate Change

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

Impact 3.5.2 - Cumulative GHG Emission Impact

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

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

Mitigation Measures

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

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

State and federal level, and will adhere to any future regulations regarding global warming resulting from the legislative approval of AB 32 and AB 1493, when available.

A number of mitigation measures are included in Section 3.3 of the Draft EIR to address criteria emissions. Public transit has been enhanced in the 2011 RTP compared to the current RTP (adopted in 2007). Such improvements will help mitigate expected increases in emissions resulting from increased population and employment and the impact of planned growth and development on the regional transportation system. The RTP also includes references to a number of studies. The Plan contains a number of projects and significant funding for various forms of transportation in addition to streets and highways. Fresno COG is in the process of developing a Regional Blueprint for the year 2050. Fresno 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 Fresno 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 Fresno 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. Fresno COG is now working with the other Valley COGs to develop a Blueprint implementation plan, which will be complete by October 2010. .

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

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

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.

- Implementation agencies will ensure implementation of the following mitigation measures to reduce GHG emissions:
  - Develop land use patterns, which encourage people to walk, bicycle, or use public transit for a significant number of their daily trips:
    - Use comprehensive community plans and specific plans to ensure development is consistent and well connected by alternative transportation modes.
    - Adopt transit-oriented or pedestrian-oriented design strategies and select areas appropriate for these designs in the general plan.
    - Support higher density development in proximity to commonly used services and transportation facilities.
  - Develop in a compact, efficient form to reduce vehicle miles traveled and to improve the efficiency of alternatives to the automobile:
    - Use the control of public services to direct development to the most appropriate locations.
    - Promote infill of vacant land and redevelopment sites.
  - Encourage project site designs and subdivision street and lot designs that support walking, bicycling, and transit use:
    - Adopt design guidelines and standards promoting plans that encourage alternative transportation modes.
    - Require certain sites to be created to allow convenient access by transit, bicycle, and walking.

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

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

- Create Alternative Fuel Vehicle and Infrastructure Toolkit for Local Governments

  Fresno COG will develop an Alternative Fuel Vehicle (AFV) and Infrastructure Toolkit for member agencies that will contain best practices related to ordinances, analytical tools, financing opportunities, codes, and standards related to reducing GHG emissions. Fresno COG will identify the alternative fuel vehicle(s) (e.g. neighborhood electric vehicles) and alternative fuel infrastructure with the potential to result in the greatest GHG emission reductions. Fresno COG will conduct a public education program for local governments and other public agencies, as appropriate to encourage the use of alternative fuel vehicles and infrastructure.

  Fresno COG will work with its member agencies to increase the number of AFVs (i.e., vehicles not powered strictly by gasoline or diesel fuel) both in municipally owned vehicles, as well as those owned by franchisees of these cities, such as trash haulers, green waste haulers, street sweepers, and curbside recyclable haulers. Such AFVs shall have GHG emissions at least 10 percent lower than comparable gasoline- or diesel-powered vehicles. The Alternative Fuel Vehicle and Infrastructure Toolkit described above will include best practices strategies to aid in the transformation of municipally owned or contracted fleets, including vehicle fleets operated and/or funded, at least in part by Fresno COG.

- Adopt Transportation Pricing Policy

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

- Create a Public Education Program on Individual Transportation Behavior and Climate Change

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

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

  Fresno COG will provide funding for a workshop on global climate change for local government officials that will focus on practical techniques that local governments can implement to reduce greenhouse gas emissions at the city and county level. Workshop topics shall include, but are not limited to the following:

  - The basic science behind climate change and its effects on the Fresno County Region.
  - Addressing the California Environmental Quality Act (CEQA) and the effects of AB 32.

- What cities and counties are doing to address climate change and CEQA.
- Cost effective actions cities can take to reduce greenhouse emissions.
- Actions being taken in the Fresno County area to advance and support innovative "green" business.

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

- Adopt Safe Routes to School Policy and Implement Pilot Program and Conduct Workshop with Cities, Counties and School Districts to Identify other Opportunities for Collaboration that may reduce Greenhouse Emissions

Within 3 years from the adoption of the 2011 RTP, Fresno COG shall adopt a Safe Routes to Schools (SRTS) policy to promote the practice of safe bicycling and walking to and from schools throughout the Plan Area in order to reduce traffic congestion, improve air quality, and enhance neighborhood safety. There are both federal and state funding programs for SRTS. As a regional agency, Fresno COG is an eligible applicant under the federal program for both infrastructure and non-infrastructure projects. Under the state program, only cities and counties are eligible applicants for infrastructure projects only. (Caltrans, 2007) With the passage of the Safe Routes to School bill (AB 1475), a "one third" distribution formula for federal safety funds to be allocated in equal amounts to: state highways, local roads, and Safe Routes to School (SRTS) construction program was established.

The federal Safe Routes to School program (SRTS) was authorized by Section 1404 of the *SAFETEA-LU (the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users*). Fresno COG shall also apply for federal funds from the Federal Highway Administration through Caltrans to implement at least one SRTS pilot program within the Plan Area.

The State-legislated Safe Routes to School program (SR2S) is contained in Streets & Highways Code Section 2330-2334. Fresno COG shall encourage its member agencies to apply for funds available through the State Highway Safety Improvement fund for eligible infrastructure projects in order to improve bicycle and pedestrian safety for school children.

Fresno COG shall also join the Safe Routes to School National Partnership, a network of more than 300 nonprofit organizations, government agencies, schools, and professionals working together to advance the Safe Routes to School movement in the United States.

In addition, Fresno COG will host a regional workshop for all cities, counties, school districts and transit operators within the region to identify other potential opportunities for collaboration that would reduce greenhouse gas impacts. At a minimum, the issues discussed will include the findings from the Safe Routes to School activities described above, opportunities to increase the number of students with bus or other transit options to get to and from school, and integrating school siting practices with goals of promoting walkable neighborhoods with a wide range of easily accessible services.

- Establish a baseline for Fresno COG's own GHG Impacts

Starting in calendar year 2011, Fresno COG shall measure and record the GHG emissions associated with its own operations in an accurate manner and in a format consistent with the California Climate Action Registry's own reporting protocol in order to establish a baseline against which any future GHG reductions may be applied.

The report shall be independently audited by a State and Registry approved certifier. The report shall include the following elements:

- Indirect emissions from electricity and natural gas use.
- Direct emissions from mobile source combustion (agency vehicles).
- Indirect emissions from business-related employee air travel.
- Direct and Indirect emissions from employee commuting.
- Indirect emissions associated with Fresno COG purchasing practices.

Fresno COG shall continue to report on its own GHG emissions consistent with this format in subsequent years and track its progress in reducing emissions. Emissions reductions in future years will comply with the goals set in the Regional Climate Change Action Plan.

Significance After Mitigation

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

3.6 CULTURAL RESOURCES

The patterns of human occupation of the area now known as Fresno County have left traces of their existence on the land. There are thousands of recorded archeological sites in the County, most of which are located in the foothills and mountains. Recorded prehistoric artifacts include village sites, campsites, bedrock milling stations, pictographs, petroglyphs, rock rings, sacred sites and resource gathering areas.

Fresno County also contains a significant number of potentially significant historical sites, including homesteads and ranches, mining and logging sites and associated features (such as small camps, railroad beds, logging chutes and trash dumps).

The purpose of this section is to discuss the potential for significant archaeological and historic sites within Fresno County and describe possible conflicts between these resources and the Project. Data collected for this evaluation is derived from resource discussions from various project EIRs, and from the State Office of Historic Preservation.

Fresno County contains a wealth of cultural resources, due to the County's history and diverse population. Numerous government agencies are tasked with identifying and protecting those resources, which are discussed below.

Regulatory

Federal Regulations

Various federal laws, regulations, and guidelines specify how cultural resources are to be managed in the context of projects that are considered "federal undertakings" (per 36 CFR 800). These federal statutes and guideline may be relevant to the proposed projects if federal funding is used, federal permits or authorizations are required, or a project crosses land managed by a federal agency.

Among the most relevant federal laws and regulations are: the *National Historic Preservation Act of 1966* (NHPA), as amended; the *National Environmental Policy Act of 1969* (NEPA); the *Archaeological Resources Protection Act of 1979* (ARPA); the Advisory Council on Historic Preservation's regulations, *Protection of Historic Properties* (36 CFR 800), establishing procedures for compliance with Section 106 of the NHPA; the National Park Service (NPS) regulations, *National Register of Historic Places* (36 CFR 60); *Archaeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines* (FR 190: 44716–44742); the *Native American Graves Protection and Repatriation Act of 1990* (PL 101–601, NAGPRA) and its implementing regulations (43 CFR 10); and the NPS regulations, *Curation of Federally-Owned and Administered Archaeological Collections* (36 CFR 79). Pertinent federal laws and regulations are summarized below.

- National Historic Preservation Act of 1966

  Requires federal agencies to consider the preservation of historic and prehistoric resources. The Act authorizes the Secretary of the Interior to expand and maintain a National Register of Historic Places (NRHP), and it establishes an Advisory Council on Historic Preservation (ACHP) as an independent federal entity. Section 106 of the Act requires federal agencies to take into account the effects of their undertakings on historic properties and afford the ACHP a reasonable opportunity to comment on the undertaking prior to licensing or approving the expenditure of funds on any undertaking that may affect properties listed, or eligible for listing, in the NRHP.

- Archaeological Resources Protection Act of 1979 (16 USC 470aa–470ll)

  Requires a permit for any excavation or removal of archaeological resources from public lands or Indian lands. The statute provides both civil and criminal penalties for violation of permit requirements and for excavation or removal of protected resources without a permit.

- Advisory Council Regulations, Protection of Historic Properties (36 CFR 800)

  Establishes procedures for compliance with Section 106 of the National Historic Preservation Act of 1966. These regulations define the Criteria of Adverse Effect, define the role of State Historic Preservation Officer (SHPO) in the Section 106 review process, set forth documentation requirements, and describe procedures to be followed if significant historic properties are discovered during implementation of an undertaking. Prehistoric and historic resources deemed significant (i.e., eligible for listing in the National Register of Historic Places, per 36 CFR 60.4) must be considered in project planning and construction. The responsible federal agency must submit any proposed undertaking that may affect NRHP-eligible properties to the State Historic Preservation Officer (SHPO) for review and comment prior to project approval.

- Archaeology and Historic Preservation; Secretary of the Interior's Standards and Guidelines (FR 190:44716–44742)

  Offers non-regulatory technical advice about the identification, evaluation, documentation, study, and other treatment of cultural resources. Notable in these Guidelines are the "Standards for Archaeological Documentation" (p. 44734) and "Professional Qualifications Standards for Archaeology" (pp. 44740–44741).

- Department of Transportation Act of 1966. Section 4(f)

  Cultural resources are also protected under regulations of the of the Act requires a comprehensive evaluation of all environmental impacts resulting from federal-aid transportation projects administered by the Federal Highway Administration, Federal Transit Administration, and Federal Aviation Administration that involve the use—or interference with use—of several types of land: public park lands, recreation areas, and publicly or privately owned historic properties of federal, state, or local significance. The Section 4(f) evaluation must be sufficiently detailed to permit the U.S. Secretary of Transportation to determine that there is no feasible and prudent alternative to the use of such land, in which case the project must include all possible planning to minimize harm to any park, recreation, wildlife and waterfowl refuge, or historic site that would result from the use of such lands. If there is a feasible and prudent alternative, a proposed project using Section 4(f) lands cannot be approved by the Secretary. Detailed inventories of the locations and likely impacts on resources that fall into the Section 4(f) category are required in project-level environmental assessments.

- Federal Antiquities Act of 1906

  Establishes national monuments and reservation of lands that have historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest on federal lands. It prohibits excavation or destruction of such antiquities unless a permit (Antiquities Permit) is obtained from the Secretary of the department, which has the jurisdiction over those lands.

- Historic Sites Act of 1935 (HSA)

  The HSA *(16 USC 461-467)* became law on August 21, 1935 and declared that it is national policy to "Preserve for public use historic sites, buildings, and objects of national significance." The NHPA expanded the scope to

include important state and local resources. Provisions of NHPA established the National Register maintained by the National Park Service, advisory councils on Historic Preservation, State Historic Preservation Offices, and grants-in-aid programs. Section 106 of the NHPA requires all federal agencies to consult the Advisory Council before continuing any activity affecting a property listed on or eligible for listing on the National Register. The Advisory Council has developed regulations for Section 106, to encourage coordination of agency cultural resource compliance requirements under Executive Order 11593 and NEPA with those of Section 106.

- National Environmental Policy Act (NEPA)

  The National Environmental Policy Act (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.

- Native American Graves Protection and Repatriation Act

  This act assigns ownership and control of Native American cultural items, human remains, and associated funerary objects to Native Americans. It also establishes requirements for the treatment of Native American human remains and sacred or cultural objects found on Federal land. This act further provides for the protection, inventory, and repatriation of Native American cultural items, human remains, and associated funerary objects. Museums that receive public funds must consult with Native Americans regarding museum collections of human remains, grave goods, and sacred items.

Federal Agencies

- National Park Service (NPS)

  The National Park Service manages all National Park, many National Monuments, and other conservation and historical properties with various title designations. It also evaluates proposed historic sites and administers the National Register of Historic Places.

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.
- 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.

<u>State Agencies</u>

- California Department of Parks and Recreations (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

Archaeological Resources

The patterns of human occupation of the area now known as Fresno County have left traces of their existence on the land. Fresno County contains distinct geographic regions that have been evaluated for archaeological resources at varying levels of detail through individual research efforts. On a regional basis, however, the level of information is extremely general. Areas of potential impact include:

- High Sensitivity - General areas within the County that have the greatest likelihood of containing resources are located between the lower foothills and the 4,500-foot elevation level. Additionally, areas along the Fresno and San Joaquin Rivers are likely to contain important resources.

- Moderate Sensitivity - Foothill areas above 4,500 feet are considered to be of moderate sensitivity. It is believed that seasonal occupation by Indian tribes was common due to discoveries of prehistoric trails and temporary trailside camps. In addition, the rim of the Valley is considered moderately sensitive, as well.

- Low Sensitivity - The Valley floor is considered to be of low sensitivity. Unfortunately, leveling of land for agricultural use, construction of dams, water transmission facilities, roads, and general urban development have likely destroyed many archaeological sites in this area.

Historic Resources

- Settlement History

Fresno County was originally inhabited by at least five Native American tribes, primarily around streams and rivers. The California Gold Rush brought many miners to the area, who eventually built a garrison to protect themselves from the Native Americans. The garrison attracted non-miners and eventually led to the formation of the City of Fresno, the County's seat. Cattle drives between Stockton, California and Texas fueled the city's development, and ranching and farming followed suit. The development of irrigation canals fueled the County's development even more. The streams and rivers were harnessed to provide a series of canals to irrigate crops and orchards on land that was previously swamp or considered non-productive desert. Most early farms consisted of family-worked operations of approximately 20 acres; larger farms produced alfalfa, cotton, wheat, and citrus fruit.

With such an emphasis on agricultural activities, communities within Fresno County were growing rapidly by the turn of the century. In response to the Great Depression of the 1930's, there was a general reversal of growth in urban areas evident in the previous decade. After World War II, Fresno County began to experience population growth as higher prices were earned for farm products. As advances in technology were made in the late 1940's, the ongoing trend of the declining farm population and increasing size of individual farms was firmly established.

- Historic Preservation

Many historic sites have been identified in Fresno County and are protected by various State and federal agencies. The listings in the National Register and the California Register (updated regularly) of all existing and potential historic objects, sites, buildings, and districts are available from the CHRC and the NPS. A complete list of historic sites in Fresno County that were identified on the National Register and the California Register as of March 2006, are identified in Table 3-12.

TABLE 3-12
Historic Sites in Fresno County

Resource	Location	Historic Significance	Area of Significance	Period
Armenian Apostolic Church	2226 Ventura Street, Fresno			
Arroyo de Cantua	Plaque On Highway 198 Nine Miles North of Coalinga, Coaling, CA			1853
Bank of Italy	1015 Fulton Mall, Fresno	Architecture/ Engineering	Architecture	1900-1949
Birdwell Rock Petroglyph Site	Address Restricted, Coalinga	Information potential, Architecture/ Engineering	Historic – aboriginal, art, religion, prehistoric	500-1900 AD
Brix, H. H., Mansion	2844 Fresno St., Fresno	Architecture/ Engineering, Event	Architecture, commerce	1900-1924
Coalinga Polk Street School	S. 5th and E. Polk Sts., Coalinga	Event, Architecture/ Engineering	Architecture, Education	1900-1924

Resource	Location	Historic Significance	Area of Significance	Period
Dinkey Creek Bridge	Off Dinkey Creek Rd., W of Camp Fresno, Sierra National Forest, Dinkey Creek	Architecture/ Engineering	Engineering	1925-1949
Einstein House	1600 M St., Fresno	Person, Event, Architecture/ Engineering	Architecture, commerce	1900-1924
Forestiere Underground Gardens	5021 W. Shaw Ave., Fresno	Person, Event, Architecture/ Engineering	Agriculture, architecture, landscape architecture	1900-1949
Fresno Bee Building	1555 Van Ness Ave., Fresno	Architecture/ Engineering, Event	Communications, architecture	1900-1924
Fresno Brewing Company Office and Warehouse	100 M St., Fresno	Architecture/ Engineering, Event	Architecture, industry	1900-1924
Fresno Memorial Auditorium	2425 Fresno St., Fresno	Event	Entertainment/ recreation	1925-1949
Fresno Republican Printery Building	2130 Kern St., Fresno	Event, Architecture/ Engineering	Architecture, commerce	1900-1924
Fresno Sanitary Landfill	West and Jensen Aves., Fresno			
Gamlin Cabin	NW of Wilsonia	Architecture/ Engineering, Event	Architecture, conservation, exploration/ settlement	1850-1924
Holy Trinity Armenian Apostolic Church	2226 Ventura St., Fresno	Event, Architecture/ Engineering	Architecture, religion, Asian	1900-1924
Hotel Californian	851 Van Ness Ave., Fresno	Architecture/ Engineering	Architecture	1900-1924
Jensen Ranch	8262 Bethel Ave., Selma	Architecture/ Engineering	Architecture	1900-1924
Kearney, M. Theo, Park and Mansion	7160 Kearney Blvd., Fresno	Person, Architecture/ Engineering, Event	Agriculture, landscape architecture, architecture	1875-1924
Kindler, Paul, House	1520 E. Olive Ave, Fresno	Architecture/ Engineering	architecture	1925-1949
Knapp Cabin	W of Cedar Grove in Kings Canyon National Park, Cedar Grove	Event	Conservation	1925-1949
Maulbridge Apartments	2344 Tulare St., Fresno	Architecture/ Engineering	Architecture	1900-1924
Meux House	1007 R St., Fresno	Architecture/ Engineering	Architecture	1875-1899

Resource	Location	Historic Significance	Area of Significance	Period
Old Administration Building, Fresno City College	1101 University Ave., Fresno	Event, Architecture/ Engineering	Agriculture, architecture, education	1900-1924
Old Fresno Water Tower	2444 Fresno St., Fresno	Event, Architecture/ Engineering	Architecture, engineering	1875-1899
Orange Cove Santa Fe Railway Depot	633 E. Railroad Ave., Orange Cove	Event	Agriculture, transportation, commerce	1900-1924
Pantages, Alexander, Theater (Warner's Theater)	1400 Fulton St., Fresno	Person, event, Architecture/ Engineering	Architecture, performing arts	1900-2000
Physicians Building	2607 Fresno St., Fresno	Event, Architecture/ Engineering	Architecture, social history	1925-1949
Reedley National Bank	1100 G St., Reedley	Architecture/ Engineering, event	Architecture, commerce	1900-1924
Reedley Opera House Complex	10th and G Sts., Reedley	Architecture/ Engineering, event	Social history, performing arts, architecture, commerce	1900-1924
Rehorn House	1050 S St., Fresno	Architecture/ Engineering	Architecture	1900-1924
Republican Printery Bldg	2120 North Kern Street, Fresno			1919
Romain, Frank, House	2055 San Joaquin St., Fresno	Person, event, Architecture/ Engineering	Architecture, politics/ government, industry	1900-1924
San Joaquin Light & Power Corporation Building	1401 Fulton St., Fresno			
Santa Fe Hotel	935 Santa Fe Ave., Fresno	Event	Hispanic	1925-1949
Santa Fe Passenger Depot	2650 Tulare St., Fresno	Event, Architecture/ Engineering	Architecture, transportation, commerce	1875-1899
Shorty Lovelace Historic District	E of Pinehurst on Kings Canyon National Park, Pinehurst	Architecture/ Engineering, event	Architecture, exploration/ settlement, industry	1900-1949
Southern Pacific Passenger Depot	1033 H St., Fresno	Event, Architecture/ Engineering	Agriculture, architecture, transportation, commerce	1875-1899
Stoner House	21143 E. Welson Ave., Sanger	Person, Architecture/ Engineering	Architecture, exploration/ settlement	1900-1924
Tower Theatre	1201 N. Wishon Ave., Fresno	Architecture/ Engineering	Architecture	1925-1949
Twining Laboratories	2527 Fresno St.,	Architecture/	Architecture, science	1925-1949

Resource	Location	Historic Significance	Area of Significance	Period
	Fresno	Engineering, person		
Warehouse Row	722, 744, and 764 P St.	Event, Architecture/ Engineering	Agriculture, architecture, transportation, commerce	1900-1924
Winchell Creek Archeological District	Address restricted, Friant			
Y.W.C.A. Building	1660 M St., Fresno	Event, Architecture/ Engineering	Architecture, social history	1900-1924

Fresno County contains a significant number of potentially significant historical sites, including homesteads and ranches, mining and logging sites and associated features (such as small camps, railroad beds, logging chutes and trash dumps). These sites have not been included on the National or California Register. However, there are several museums in the County that may help to identify and preserve these resources. These museums are identified in Table 3-13. Historical landmarks, and museums dedicated to a site on a register are not included.

TABLE 3-13
Museums in Fresno County

Name	Subject	Location
African-American Museum	Art, history and culture of African-Americans in the Central Valley	Fresno
Arte Americas	Celebration of arts in Mexico, Latin America and the Southwest	Fresno
California Memorial Museum	9-11	Clovis
Central California Historical Military Museum	Military architecture and aviation	Firebaugh
Centro Bellas Artes	Art and culture of Mexico, Latin America, Southwest, and California	Fresno
Clovis-Big Creek Historical Museum	Clovis History	Clovis
Coke Hallowell Center for River Studies	Architecture, art and culture of San Joaquin River	Fresno
Discovery Center	Local ecosystems	Fresno
Downey Planetarium	30 foot stargazing dome	Fresno
Fresno Arts Center and Museum	Central California cultural heritage	Fresno
Fresno Metropolitan Museum	Art, history, and science	Fresno
American Historical Society of Germans from Russia	History of Russians of German descent	Fresno
Kearney Mansion Museum	History of Central California agriculture	Fresno
Kingsburg Historical Park	Swedish heritage and architecture	Kingsburg
Legion of Valor Museum	Relics of America's wars	Fresno
Mennonite Quilting Center	Quilting and handmade rugs	Reedley
Meux Home Museum	Early Fresno family life	Fresno
Millerton Courthouse	First County Seat Courthouse	Millerton
R.C. Baker Memorial Museum	Coalinga archaeology and history	Coalinga
Reedley Museum	Reedley history	Reedley
Reedley Opera House	Opera House	Reedley
Sanger Depot Museum	Sanger history and numerous collections	Sanger

California's Office of Historic Preservation has also designated several historical landmarks in Fresno County, which are identified in Table 3-14.

TABLE 3-14
Historical Landmarks in Fresno County

Landmark	Significance	Location
ARROYO DE CANTUA	The headquarters and place where Joaquin Murrieta was killed.	SW of Cantua Creek Bridge near Coalinga
FORESTIERE UNDERGROUND GARDENS	A unique complex of underground rooms, passages, and gardens throughout a ten-acre parcel.	Fresno
FORT MILLER	The temporary headquarters during the latter part of the Mariposa Indian War and the site of the signing of the peace treaty. Also the first recorded religious services in the Fresno area.	Friant
FRESNO CITY	The original site of 'Fresno City' between 1855 and 1875.	2 miles north of Tranquility
SITE OF FIRST JUNIOR COLLEGE IN CALIFORNIA	Fresno High School was the first junior college of California.	Fresno
SITE OF THE FRESNO FREE SPEECH FIGHT OF THE INDUSTRIAL WORKERS OF THE WORLD	This was the first fight for free speech in California, and the first attempt to organize the valley's unskilled workers by the Industrial Workers of the World.	Fresno
TEMPORARY DETENTION CAMPS FOR JAPANESE AMERICANS-FRESNO ASSEMBLY CENTER	Temporary detention camps for Japanese Americans during World War II	Fresno
TEMPORARY DETENTION CAMPS FOR JAPANESE AMERICANS-PINEDALE ASSEMBLY CENTER	Temporary detention camps for Japanese Americans during World War II	Pinedale

Ethnic Resources

Places considered sacred to the Native American community in Fresno County have been recorded in EIRs and research papers/studies, although a comprehensive resource study has not been conducted for a majority of the County. The Native American Heritage Commission (NAHC) offers guidelines to archaeologists to obtain information concerning cultural resources of Native American origin. A primary concern of the Native American community is the disturbance of hidden or unmarked sites, such as gravesites, that may not show surface evidence and may be known only to members of the tribe.

Native American burial grounds are of particular concern and the most emotional of archaeological resource issues. Such sites are often on private land, and project development is often approved before the local Native American community is consulted. NAHC has issued recommendations for the documentation of Native American heritage resources in order to assist agencies and individuals in complying with current environmental law. NAHC urges direct consultation with the local Native American community in the course of research conducted for the purpose of site-specific environmental documentation.

Section 4(f) Requirements

Historic and cultural resources are also protected under regulations of the National Historic Preservation Act and the Department of Transportation Act of 1966. Section 4(f) of the Transportation 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 parklands.
- Recreation areas.
- Wildlife and waterfowl refuges.
- Publicly or privately owned historic properties of federal, state, or local significance.

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

- There is no feasible and prudent alternative to the use of such land.
- The program includes all possible planning to minimize harm to any park, recreation area, wildlife and waterfowl refuge, or historic site that would result from the use of such lands.

If there is a feasible and prudent alternative, a proposed project using Section 4(f) lands cannot be approved by the Secretary. If there is no feasible and prudent alternative, the proposed project must include all possible planning to minimize harm to the affected lands. Detailed inventories of the locations and likely impacts on resources that fall into the Section 4(f) category are required in project-level environmental assessments.

Applicable Policies and Regulations

Archaeologic and paleontologic resources are frequently uncovered during construction of development projects, while historic resources are generally known. Strict mitigation and protection measures are required whenever such resources are discovered. In addition, there is a general requirement that a cultural resource survey and environmental analysis be prepared prior to commencement of any action, development, or land use change subject to CEQA or NEPA on lands subject to federal jurisdiction or for projects involving federal funds.

Environmental Impacts, Mitigation Measures, and Criteria for Significance

To determine the actual potential for significant impacts on cultural resources resulting from implementation of transportation improvements, project-specific studies would be necessary. It is recognized that important cultural resources may be encountered during ground-disturbing construction work on any individual improvement project contained in the RTP. It is also recognized that projects associated with the operation and maintenance of the transportation system, such as signalization equipment replacement, and pavement maintenance, would not directly affect cultural resources. Since the specific locations of cultural resources are not generally mapped, and since the extent of ground disturbance associated with various improvement projects is unknown at this time, it is not possible to assess the specific impacts on cultural resources based upon the location of these projects - many of whose specific alignments have not been established. Accordingly, no project-specific reviews or field studies have been undertaken for this EIR. The analysis of the impact on cultural resources potentially resulting from implementation of improvement projects is, therefore, based upon cultural resource impacts that are generally associated with any activities that involve ground-disturbing activities.

Criteria for Significance

The CEQA Guidelines establish that a significant impact would be expected to occur if the project would:

- Cause a substantial adverse change in the significance of an historical resource.
- Cause a substantial adverse change in the significance of an archaeological resource.
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.
- Disturb any human remains, including those interred outside of formal cemeteries.

In addition, CEQA defines the need for evaluating the impacts that a project may have on a community, ethnic, or social group. A project will normally have a significant effect on the environment if it will cause one of the following, as defined in Appendix G of the CEQA Guidelines, Significant Effects:

- Significant effects to cultural resources in each planning area would occur if population increases occur in areas of historic districts and historic sites
- Significant effects to cultural resources would result if the improvement projects placed significant future populations in areas of potential or known archaeological and/or paleontological significance

All regions in the Project area have the potential for yielding as yet undiscovered, archaeological, and paleontological resources and human remains. The development of new transportation facilities may affect archaeological and paleontological resources, primarily through the disturbance of buried resources. Frequently, these resources are previously unidentified. Therefore, any excavation in previously undisturbed soil has the potential to impact archaeological and paleontological resources.

Development of new transportation facilities may affect historic architectural resources (structures 50 years or older), either through direct affects to buildings within the proposed individual improvement project area, or through indirect affects to the area surrounding a resource if it creates a visually incompatible structure adjacent to a historic structure. Impacts to historic resources fall into three categories:

- Direct disturbance of buried resources.
- Direct impact or alternation of structures.
- Indirect impacts to structures, such as vibration and corrosive air contaminants, and creation of a visually incompatible environment.

Fresno County contains a large number of historic properties and historic residential districts; therefore, the potential for impacts to historic properties is significant. Improvements within existing rights-of-way are less likely to affect historical architectural resources. However, new highway segments through historic districts would constitute a significant impact. In addition, reducing buffer zones between transportation corridors and reduction of historic resources through lane widening could cause significant impacts.

CEQA *(Section 5020.1),* defines a potential historic resource as including, but not limited to, any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, regardless of age. The 45 year criteria, was designed by the OHP to take into consideration resources which may be considered significant in the near future. Types of projects that may potentially impact cultural resources include:

- Regionally significant streets and highways that involve the development of new lanes and right-of-way acquisition.

- Freeway projects include developing mixed flow lanes, some new lanes, and possible right-of-way acquisition.
- Bridge crossing projects that include the development of new lanes and right-of-way acquisition.
- Interchange improvement projects that include new lanes and possible right-of-way acquisition.

Since some excavation is involved in all of the above mentioned project types, it is necessary that prior to beginning each of the proposed projects, potential impacts to individual cultural resources and appropriate mitigation measures should be identified on a project by project basis. It is important that the vicinity of individual projects be carefully evaluated to identify resources and potential impacts. As time passes and structures age, the status of structures change as their age (45 years or older) makes them eligible for historic status. In addition, data on archaeological resources changes since data is added to the regional database on a continuous basis. Thus, the potential for encountering archaeological resources changes, because knowledge of their location allows them to be avoided.

Impact 3.6.1 – Impacts on Historic Resources

Development of highway, arterial, bridge crossing and transit projects may impact historic resources. This would be considered a significant impact. Types of projects that have the potential to impact historic resources include highway projects and bridge crossings that entail the development of new lanes and in some instances acquisition of new right-of-ways, and arterials and interchange projects, which entail the development of new lanes, and right-of-way acquisition.

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. Fresno COG will be provided with documentation indicating compliance with mitigation measures.

- As part of the appropriate environmental review of individual projects, the project implementation agencies will identify potential impacts to historic resources. A record search at the appropriate Information Center will be conducted to determine whether the individual improvement project area has been previously surveyed and whether resources were identified.

- As necessary, prior to construction activities, the project implementation agencies will obtain a qualified architectural historian to conduct historic architectural surveys as recommended by the Archaeological Information Center. In the event the records indicate that no previous survey has been conducted, the Information Center will make a recommendation on whether a survey is warranted based on the sensitivity of the individual improvement project area for cultural resources.

- The project implementation agencies will comply with Section 106 of the National Historic Preservation Act if federal funding or approval is required. This law requires federal agencies to evaluate the impact of their actions on resources included in or eligible for listing in the National Register of Historic Places. Federal agencies must coordinate with the State Historic Preservation Officer in evaluating impacts and developing mitigation. These mitigation measure may include, but are not limited to the following:

    - The project implementation agencies will carry out the maintenance, repair, stabilization, rehabilitation, restoration, preservation, conservation, relocation, or reconstruction of any impacted historic resource, which will be conducted in a manner consistent with the Secretary of the Interior's Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings.

- In some instances, the following mitigation measure may be appropriate in lieu of the previous mitigation measure:
  - The project implementation agencies will secure a qualified environmental agency and/or architectural historian, or other such qualified person to document any significant historical resource(s), by way of historic narrative, photographs, or architectural drawings, as mitigation for the effects of demolition of a resource will not mitigate the effects to a point where clearly no significant effect on the environment would occur.

Significance After Mitigation

This impact is considered less-than-significant after mitigation, because the recommended mitigation would require the local jurisdiction to follow a comprehensive procedure to assess the magnitude of the impact, and to avoid or mitigate the impacts, if necessary.

Impact 3.6.2 – Construction Impacts on Archaeological Resources

Construction activities involving excavation and earthmoving may encounter archaeological resources. This would be considered a significant impact. The OHP defines an archaeological "site" as consisting of three or more related resources discovered in one locality. In the event of archaeological and paleontological discovery, the resources are collected, documented and curated at an educational institution, such as a school or a museum. The curation facility is usually appropriated by the landowner or lead agency. A unique archaeological resource includes artifacts or sites in which it can be demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any one or all of the following criteria:

- It has made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States.
- It is associated with the lives of persons important to California's past.
- It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
- It has yielded, or may be likely to yield, information important to the prehistory or history of California.

The Project includes new streets, roads and highways, street, road and highway widening (for wider lanes, shoulders or new lanes), new transit facilities, grade crossings, consolidated rail corridors, bridge projects and a number of interchanges. These types of projects have the potential to impact archaeological materials, because they could take place in previously undisturbed areas. Excavation and soil removal of any kind, irrespective of depth, has the potential to yield resources of archaeological significance. Improvements and modifications to existing rights-of-way and right-of-way maintenance (such as pothole repair), would have less of an impact to archaeological resources because these individual improvement project locations have previously been disturbed. However, construction of additional lanes, would potentially impact archaeological materials, if it would entail brush clearing, grading, trenching, excavation, and/or soil removal of any kind, in an area not previously used as a paved transportation facility.

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. Fresno COG will be provided with documentation indicating compliance with mitigation measures.

Implementation of the following mitigation measures for archaeological resources is recommended to reduce impacts to a less-than-significant level. Project proponents will implement the following measures as part of the individual improvement project review process for proposed transportation projects:

- As part of the appropriate environmental review of individual projects, the project implementation agencies will consult with the Native American Heritage Commission to determine whether known sacred sites are in the project area, and identify the Native American(s) to contact to obtain information about the individual improvement project site.

- Prior to construction activities, the project implementation agencies will obtain a qualified archaeologist to conduct a record search at the appropriate Information Center of the California Archaeological Inventory to determine whether the individual improvement project area has been previously surveyed and whether resources were identified.

- As necessary prior to construction activities, the project implementation agencies will obtain a qualified archaeologist or architectural historian (depending on applicability) to conduct archaeological and/or historic architectural surveys as recommended by the Information Center. In the event the records indicate that no previous survey has been conducted, the Information Center will make a recommendation on whether a survey is warranted based on the sensitivity of the individual improvement project area for cultural resources.

- If the record search indicates that the individual improvement project is located in an area rich with cultural materials, the individual improvement project proponent will retain a qualified archaeologist to monitor any subsurface operations, including but not limited to grading, excavation, trenching, or removal of existing features of the subject property.

- Construction activities and excavation will be conducted to avoid cultural resources (if found). If avoidance is not feasible, further work may need to be done to determine the importance of a resource. The project implementation agencies will obtain a qualified archaeologist familiar with the local archaeology, and/or an architectural historian should make recommendations regarding the work necessary to determine importance. If the cultural resource is determined to be important under state or federal guidelines, impacts on the cultural resource will be mitigated.

- The project implementation agencies will stop construction activities and excavation in the area where cultural resources are found until a qualified archaeologist can determine the importance of these resources.

Significance After Mitigation

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

Impact 3.6.3 – Construction Impacts on Paleontological Resources

Construction activities involving excavation and earthmoving may encounter paleontological materials. This is a significant impact. Construction of projects may cause unearthing of buried paleontological resources, such as true fossils, fossil casts, and breas. Construction occurring in previously undisturbed areas and deep excavation activities would have the greatest likelihood to affect paleontological resources. Improvements proposed in existing rights-of-way would have less potential to affect paleontological resources, since these areas have been previously disturbed.

However, excavation and soil removal of any kind, irrespective of depth, has the potential to yield resources of paleontological significance. Fossils can be found at the surface in an outcrop, whereby chances are that same formation may extend many feet straight down into the ground, and may well extend for miles just below the surface. This makes the task of predicting which areas are paleontologically sensitive difficult. Construction and excavating activities relating to this Project pose a significant impact to paleontological materials.

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. Fresno COG will be provided with documentation indicating compliance with mitigation measures. Project proponents in the Fresno region will implement the following measures as part of the review process for proposed transportation projects:

- As part of the appropriate environmental review of individual projects, the project implementation agencies will obtain a qualified paleontologist to identify and evaluate paleontological resources where potential impacts are considered high; the paleontologist will also conduct a field survey in these areas.

- Construction activities will avoid known paleontological resources, especially if the resources in a particular lithic unit formation have been determined through detailed investigation to be unique. If avoidance is not feasible, paleontological resources will be excavated by the qualified paleontologist and given to a local agency, State University, or other applicable institution, where they can be displayed.

Significance After Mitigation

The measures recommended above require the individual improvement project proponents to assess the magnitude of the impact to resources, and to avoid or mitigate impacts. However, due to the size and potentially large number of paleontological localities that could be disturbed as a result of the combined projects, this impact would remain a potentially significant impact at a regional level.

Impact 3.6.4 – Impacts on Human Remains

Construction activities involving excavation and earthmoving may encounter human remains. This is a significant impact.

Humans have occupied Fresno County for at least 10,000 years, and it is not always possible to predict where human remains may occur outside of formal burials. Therefore, it is likely that excavation and construction activities, regardless of depth, may yield human remains that may not be interred in marked, formal burials. Construction and excavation activities associated with this Project are considered to potentially yield a significant impact relative to the discovery of human remains. Under CEQA, human remains are protected under the definition of archaeological materials as being “any evidence of human activity”. Human remains are also protected under the Native American Graves and Repatriation Act (NAGPRA) of 1990, which was enacted to provide for the protection of Native American graves, as well as culturally affiliated items, associated funerary objects, unassociated funerary objects, sacred objects, and objects of cultural patrimony. NAGPRA states the following:

- A burial site means any natural or prepared physical location, whether originally below, on, or above the surface of the earth, into which as part of the death rite or ceremony of a culture, individual remains are deposited.

As previously stated, the Project includes new highways, highway widening, new transit facilities, grade crossings, rail corridors, bridge crossings and interchanges. These activities all have a potential to yield previously

undiscovered human remains, because they could take place in previously undisturbed or under-disturbed areas. Excavation and soil removal of any kind, irrespective of depth, has the potential to yield human remains. Improvements and modifications to existing rights-of-way would have less of an impact because these individual improvement project locations have previously been disturbed. However, construction of additional lanes, could potentially impact human remains, if it would entail brush clearing, grading, trenching, excavation, and soil removal of any kind, in an area not previously used as a paved transportation facility.

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. Fresno COG will be provided with documentation indicating compliance with mitigation measures.

As part of the appropriate environmental review of individual projects, the project implementation agencies, in the event of discovery or recognition of any human remains, during construction or excavation activities associated with the individual improvement project, in any location other than a dedicated cemetery, will cease further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until the coroner of the county in which the remains are discovered has been informed and has determined that no investigation of the cause of death is required

- If the remains are of Native American origin, the coroner will contact the Native American Heritage Commission in order to ascertain the proper descendants from the deceased individual. The coroner will make a recommendation to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods, which may include obtaining a qualified archaeologist or team of archaeologists to properly excavate the human remains.

- If the Native American Heritage Commission was unable to identify a descendant or the descendant failed to make a recommendation within 24 hours after being notified by the commission, in which case:

  - The landowner or his authorized representative will obtain a Native American monitor, and an archaeologist, if recommended by the Native American monitor, and rebury the Native American human remains and any associated grave goods, with appropriate dignity, on the property and in a location that is not subject to further subsurface disturbance where the following conditions occur:

    - The Native American Heritage Commission is unable to identify a descendent.
    - The descendant identified fails to make a recommendation.
    - The landowner or his authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.

Significance After Mitigation

This impact is considered less-than-significant after mitigation, because the recommended mitigation would require the individual improvement project proponent to follow a comprehensive procedure to assess the magnitude of the impact, and to avoid or mitigate the impacts, if necessary.

Cumulative Impacts 3.6.5

Growth and development in Fresno County will increase substantially by 2035. The 2011 RTP, by increasing mobility and by inclusion of transportation measures, influences the pattern of this development. The 2011 RTP's influence on growth contributes to regional impacts to existing historic resources and previously undisturbed and undiscovered cultural resources, as described in Impacts 3.6.1 and 3.6.4 above.

This impact would be cumulatively considerable.

The amount of new developed acreage (consuming previously vacant, open space/recreation and agricultural land) from transportation and land use policies in the 2011 RTP would be considerable when compared to the No Build or No Project Alternatives. This degree of development is reasonably foreseeable; however, to assign this future development to precise locations would be speculative, such that it cannot be estimated where cultural resources would be affected. Despite the inability to predict the acreage of previously undisturbed land that may be affected, it is reasonable to expect that this future development would contribute to the same types of impacts detailed in Impacts 3.6.1 and 3.6.4 above.

These effects are considered a significant cumulative impact.

Mitigation Measures

The cumulative impacts to cultural resources, due to the forecast growth and development associated with the 2011 RTP, would be mitigated using the same measures detailed for Impacts 3.6.1 and 3.6.4, in addition to the following measure.

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

Significance After Mitigation

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

3.7 GEOLOGY & SOILS

Fresno County encompasses 5,963 square miles and is defined by distinct geological features, including the nearly level alluvial plains of the San Joaquin Valley, the foothills of the Coast Ranges and the foothills/mountains of the southern Sierra Nevada. Elevations in the county range widely from approximately 4,000 feet in the Coastal Ranges, to 365 feet above sea level near the City of Fresno, to nearly 14,000 feet peaks in the Sierra Nevada. San Joaquin Valley lies mostly below 1,000 feet.

Fresno County covers portions of three of the eleven geologic provinces of California (Figure 3-5). These provinces include the eastern Coast Ranges, the Great Valley of California, and the southern Sierra Nevada. Each province differs from the others in the nature of its geologic history.[3]

- Coast Ranges – The segment of the Coast Ranges province that lies within Fresno County is characterized by north-northwest trending mountain ranges of moderate relief. These ranges are underlain primarily by folded marine sedimentary rocks are and 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, comprised of the southern Sierra Nevada and Tehachapi Mountains, contains most of the high mountains in Fresno County. Granitic rocks underlie most of the southern part of the province and are part of the Sierra Nevada batholith.

- 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.

Regulatory Setting

Federal Agencies and Regulations

- United States. 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. In addition to many other natural resource conservation programs, the NRCS manages the Farmland Protection Program, which provides funds to help purchase development rights to keep productive farmland in agricultural uses. Working through existing programs, USDA joins with State, tribal, or local governments to acquire conservation easements or other interests from landowners.

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 provide maps and statistical data for use in planning for the best utilization of California's agricultural resources.

[3] California Division of Mines and Geology, Mines and Mineral Resources of Fresno County, California, County Report 1 (1962)

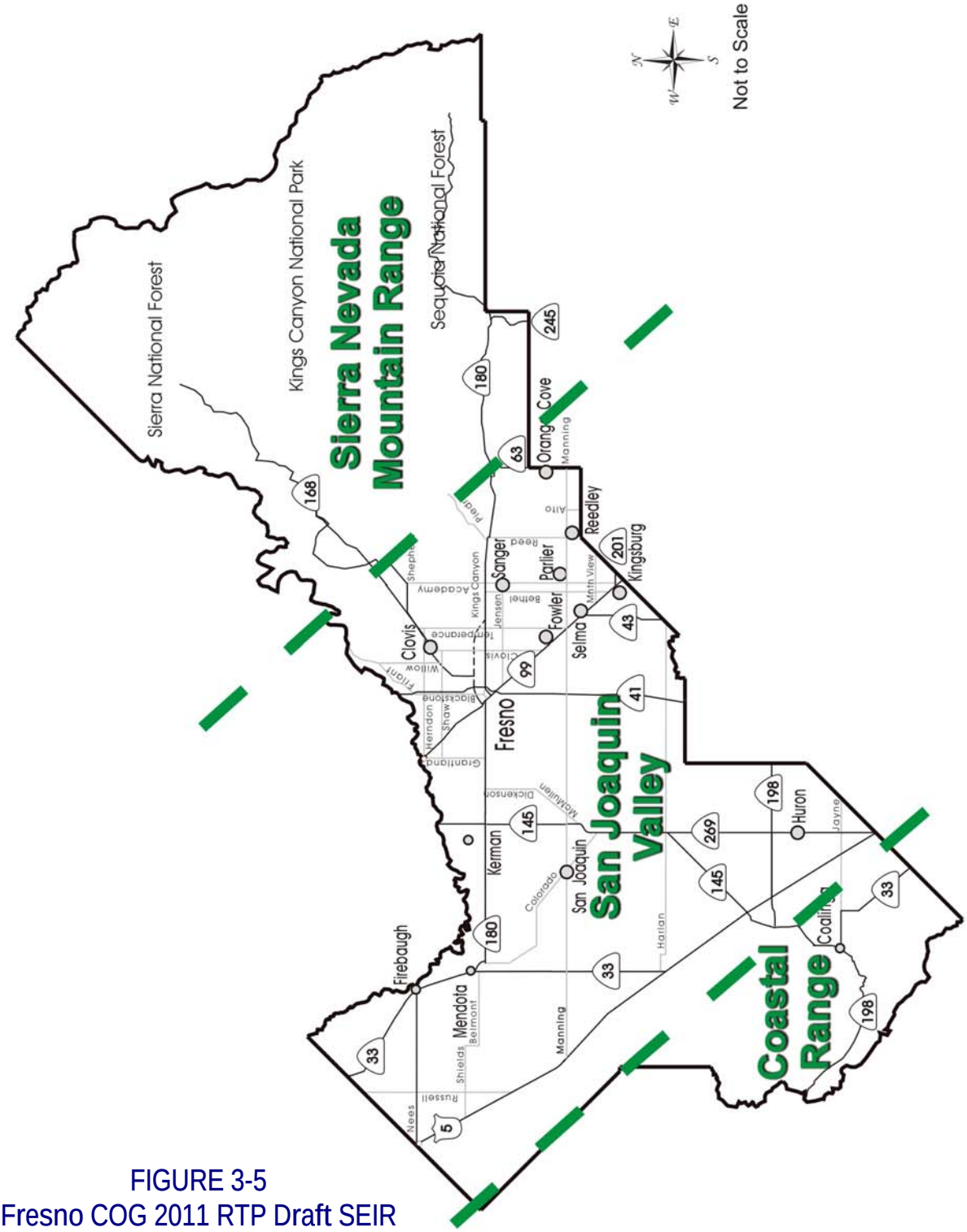


FIGURE 3-5
Fresno COG 2011 RTP Draft SEIR
Geologic Provinces

The California Land Conservation Act of 1965, also known as the Williamson Act, is designed to preserve agricultural and open space lands by discouraging their premature and unnecessary conversion to urban uses. Williamson Act contracts, also known as agricultural preserves, offer tax incentives for agricultural land preservation by ensuring that land will be assessed for its agricultural productivity rather than its highest and best uses.

- California Building Code

The *California Building Code* is another name for the body of regulations contained in Title 24, Part 2, of the California Code of Regulations, which is a portion of the California Building Standards Code (CBSC, 1995). Title 24 is assigned to the California Building Standards Commission which, by law, is responsible for coordinating all building standards. Under state law, all building standards must be centralized in Title 24 or they are not enforceable. Published by the International Conference of Building Officials, the Uniform Building Code (UBC) is a widely adopted model building code in the United States. The California Building Code incorporates by reference the UBC with necessary California amendments. About one-third of the text within the California Building Code has been tailored for California earthquake conditions. Although widely accepted and implemented throughout the United States, local, city and county jurisdictions can adopt the UBC either in whole or in part.

- Alquist-Priolo Special Study Zones

The Alquist-Priolo Earthquake Fault Zoning Act of 1971 requires that special geologic studies be conducted to locate and assess any active fault traces in and around known active fault areas prior to development of structures for human occupancy. This state law was a direct result of the 1971 San Fernando Earthquake, which was associated with extensive surface fault ruptures that damaged numerous homes, commercial buildings, and other structures.

The Alquist-Priolo Act's main purpose is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. This Act addresses only the hazard of surface fault rupture and is not directed toward other earthquake hazards.

- Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act of 1990 addresses non-surface fault rupture earthquake hazards, including liquefaction and seismically-induced landslides. The purpose of the Act is to protect the public from the effects of strong ground shaking, liquefaction, landslides, or other ground failure, and other hazards caused by earthquakes. The program and actions mandated by the Seismic Hazards Mapping Act closely resemble those of the Alquist-Priolo Earthquake Fault Zoning Act.

- Surface Mining Area Reclamation Act (SMARA)

SMARA was enacted by the California Legislature to address the need for a continuing supply of mineral resources, and to prevent or minimize the negative impacts of surface mining to public health, property and the environment. SMARA mandates the California Geological Survey (CGS) to provide objective economic-geologic expertise to assist in the protection and development of mineral resources through the land-use planning process. The primary products are mineral land classification maps and reports for urban and non-urban areas of the state. Local agencies are required to use the classification information when developing land-use plans and when making land-use decisions.

- California Department of Transportation (Caltrans)

  Caltrans' jurisdiction includes rights-of-way of state and interstate routes within California. Any work within the right-of-way of a federal or state transportation corridors is subject to Caltrans' regulations governing allowable actions and modifications to the right-of-way. Caltrans issues permits to encroach on land within their jurisdiction to ensure encroachment is compatible with the primary uses of the State Highway System, to ensure safety, and to protect the State's investment in the highway facility. The encroachment permit requirement applies to persons, corporations, cities, counties, utilities, and other government agencies. A permit is required for specific activities including opening or excavating a state highway for any purpose, constructing or maintaining road approaches or connections, grading within rights-of-way on any state highway, or planting or tampering with vegetation growing along any state highway. The encroachment permit application requirements relating to geology, seismicity and soils include information on road cuts, excavation size, engineering and grading cross-sections, hydraulic calculations, and mineral resources approved under SMARA.

Local Agencies and Regulations

- General Plans and Seismic Safety Element

  City and county governments typically develop as part of their General Plans, safety and seismic elements that identify goals, objectives, and implementing actions to minimize the loss of life, property damage and disruption of goods and services from man-made and natural disasters including floods, fires, non-seismic geologic hazards and earthquakes. Local governments may provide policies and develop ordinances to ensure acceptable protection of people and structures from risks associated with these hazards. Ordinances may include those addressing unreinforced masonry construction, erosion or grading.

Environmental Setting

Seismic and Geologic Hazards

Fresno County is subject to several types of hazards associated with seismic and geological conditions. These include earthquake faults, ground shaking, and ground failure.

- Faults

  Fresno County is subject to risks associated with several major fault systems (Figure 3-6) currently identified in the region. Those fault systems are briefly discussed in the Table 3-15.

  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.

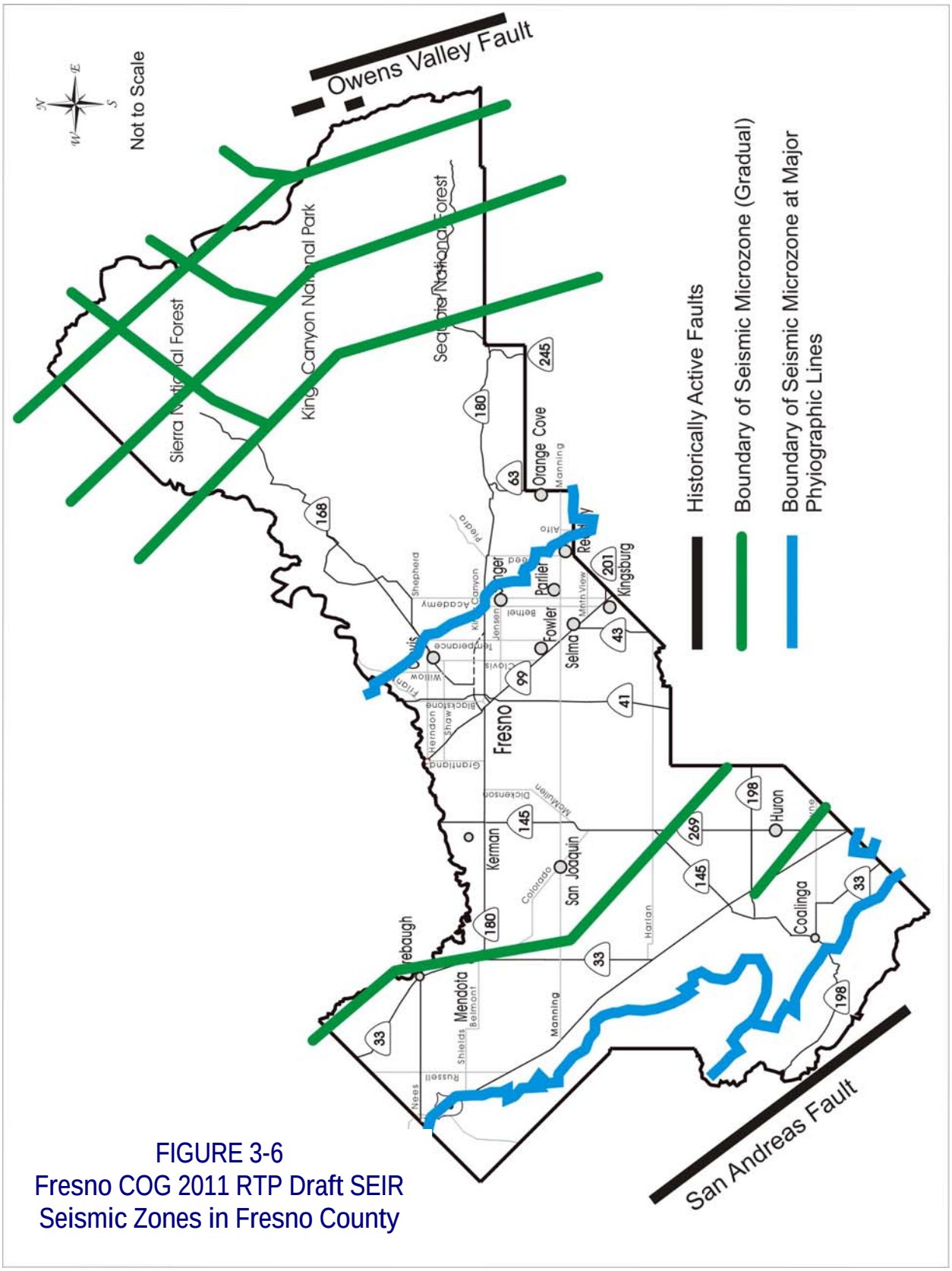


FIGURE 3-6
Fresno COG 2011 RTP Draft SEIR
Seismic Zones in Fresno County

TABLE 3-15
Major Potentially Active Faults in Fresno County

Fault	Displacement Age	Notes
Clovis	Pre-Quaternary	
Hartley Springs, Silver Lake	Holocene and Quaternary	
Unnamed Inferred	Pre-Quaternary	
Nunez	1983	Earthquake Hazard Zone
Ortigalita	Holocene	Earthquake Hazard Zone
San Andreas	Active	
Sierra Nevada	Active	
Foothills	No activity during last 1.6 million years; however, potentially active	
White Wolf	1952	
Coast Range-Sierran Block	Active	

Source: Fresno County General Plan, Background Report, January 2000

- Ground Shaking

Fresno County is located near one of the more seismically active faults of California, the San Andreas Fault, and may, at any time, be subject to moderate or severe ground shaking. 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 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 to a large extent depends 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. Local ground conditions that affect the intensity of the ground shaking include the magnitude of the earthquake, the distance from the epicenter, the type of rock or sediment in the area, and the degree of water saturation. Since the valley portions of Fresno County are composed of alluvial deposits, the intensity of ground shaking would be greater than the foothill or mountain areas in the County that are composed of rock.

The Five County Seismic Safety Element was prepared for Fresno, Kings, Madera, Mariposa and Tulare Counties in 1974, but has not been updated and does not include recent seismic activity. However, the California Division of Mines and Geology (CDMG) have compiled their Probabilistic Seismic Hazard Map, which is based on a 10 percent probability of earthquake occurrence in 50 years for Fresno County. The Fresno County portion of that map can be viewed on Figure 3-6.

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.

- Ground Failure

Fresno 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. Specific types of ground failure and provided local data are described 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. Small landslides are common within the 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. Western Fresno County contains large areas of intense land subsidence caused by excessive groundwater pumping. 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 due to adding moisture, and heaving may not occur on the site until six months to a year later.
- 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 willow water table, within 30 feet of the ground surface. 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 Fresno County during the winter and spring rains, as well as during windstorms. Erosion can be an on-going, gradual process or a rapid process during wind and flood events. Areas in Fresno 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 due to recent fires. Proper engineering, grading, construction, landscaping, drainage and enforcement can reduce losses associated with erosion.

Soils

Soil types within Fresno 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[4]. A soil series is a group of soils that have similar characteristics and layers.

[4] U.S. Dept. of Agriculture Soil Conservation Service, Report and General Soil Map of Fresno County.

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.

Environmental Impacts, Mitigation Measures, and Significance After Mitigation

Impact 3.7.1 – Damaged transportation Infrastructure from Seismic Activity

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

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

Mitigation Measures

- 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 project 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 project-specific mitigation designed to avoid or reduce the identified significant Project impacts to a less than significant level.

Impact 3.7.2 – Slope Failure and Erosion Due to Project Construction

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 the 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 due to 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 due to 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 project 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 Fresno County, long-term erosion and the potential for slope-failure will remain significant.

Impact 3.7.3 - Subsidence and the Presence of Expansive Soils

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 Fresno County due to 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 Fresno County, 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.

Impact 3.7.4 – Susceptibility to Seismic Action

Because of Fresno County's moderately high level of seismic activity (reference Figure 3-6), construction projects may be susceptible to fault rupture and severe ground shaking. Project susceptibility and potential damage to structures resulting from seismic action is considered a significant impact.

Mitigation Measure

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

Significance After Mitigation

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

Impact 3.7.5 – Geotechnical Impacts

As discussed in the Environmental Setting Section, soil types and bedrock formations within Fresno 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 transportation 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 proposed Project could potentially have short-term and long-term effects on water quality downstream from specific project sites. The short-term impacts relate to the grading and construction phases of project implementation 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 should 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 Fresno County, long-term erosion and the potential for slope-failure will remain significant.

Impact 3.7.6 – Impacts on State-Owned and State Minerals Reserved Lands

Some street and highway projects may be proposed along alignments that will affect State-owned and State minerals 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 and State mineral-reserved lands within Fresno County, the Project has the potential of causing significant impacts even with specific-project design. As a result, the impact will remain significant.

Cumulative Impact 3.7.7

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

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

Mitigation Measures

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

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

Significance After Mitigation

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

3.8 HAZARDOUS MATERIALS

Hazardous waste is defined by Section 25117 of Division 20 of the Health and Safety Code as:

A waste or combination of wastes, which because of its quantity, concentration, physical, chemical, or infectious characteristics, may:

- *Cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible illness; or*
- *Pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of, or otherwise managed.*

Regulatory Setting

Numerous laws and regulations at all levels of government serve to minimize the potential impacts associated with the use and handling of hazardous materials. The most relevant federal, state, and local hazardous materials laws and regulations are summarized in this section.

Federal Agencies and Regulations

- United States Environmental Protection Agency (EPA)

  The EPA is the primary federal agency charged with protecting human health and with safeguarding the natural environment: air, water, and land. EPA works to develop and enforce regulations that implement environmental laws enacted by Congress. EPA is responsible for researching and setting national standards for a variety of environmental programs, and delegates to states and tribes the responsibility for issuing permits and for monitoring and enforcing compliance. Since 1970, the EPA has enacted numerous environmental laws including the Resource Conservation and Recovery Act (RCRA); the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA); and the Toxic Substances Control Act (TSCA).

- Resource Conservation and Recovery Act (RCRA)

  The 1976 Resource Conservation and Recovery Act (RCRA) is the principle federal law that regulates generation, management, and transportation of waste. RCRA gave the EPA authority to develop strict requirements for all aspects of hazardous waste management including the treatment, storage, and disposal of hazardous waste. In addition, RCRA requires the inspection, enforcement, and formal corrective action for facilities that do not live up to the terms of their permits and other requirements. To achieve these goals, RCRA established three programs:

  - Subtitle D (Solid Waste Program): Encourages states to develop comprehensive plans to manage non-hazardous industrial solid waste and municipal solid waste, sets criteria for municipal solid waste landfills and other solid waste disposal facilities, and prohibits the open dumping of solid waste.

  - Subtitle C (Hazardous Waste Program): Establishes a system for controlling hazardous waste from the time it is generated until its ultimate disposal ("cradle to grave").

  - Subtitle I (UST Program): The underground storage tank (UST) program regulates the design and operation of underground storage tanks containing hazardous substances and petroleum products.

A cornerstone of RCRA is management of waste "from cradle to grave," in other words, from generation, to transportation, treatment, storage, and ultimately, disposal. To assure this, the RCRA utilizes a manifest system, which is a data sheet that identifies each waste shipment. Identification from generators and transporters, and permits for Toxic Substance Disposal Facilities (TSDFs) is required, enabling waste shipments, such as special hazardous waste, to be tracked. The manifest will accompany the waste from the generating facility to the final disposal site, thus, allowing for "cradle to grave" tracking of the waste.

- Hazardous Materials Transportation Act

The U.S. Department of Transportation (DOT) regulates hazardous materials shipping at the federal level (49 CFR Parts 171-180). Congress passed the Hazardous Materials Transportation Act in 1975 to give authority to the Secretary of Transportation "to provide adequate protection against the risks to life and property inherent in transporting hazardous materials in commerce."

- Research and Special Programs Administration (RSPA)

The RSPA of DOT issues the hazardous materials regulations. The regulations cover definition and classification of hazardous materials, communication of hazards to workers and the public, packaging and labeling requirements, operational rules for shippers, and training. They apply to interstate, intrastate, and foreign commerce by air, rail, ships, and motor vehicles, and also cover hazardous waste shipments. The Federal Highway Administration (FHWA) is responsible for highway routing of hazardous materials and highway safety permits. The U.S. Coast Guard regulates bulk transport by vessel. The hazardous material regulations include emergency response provisions, including incident reporting requirements. Reports of major incidents go to the National Response Center, which in turn is linked with CHEMTREC, a service of the chemical manufacturing industry that provides details on most chemicals shipped in the U.S.

- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

CERCLA (generally referred to as Superfund) was enacted by Congress on December 11, 1980. CERCLA established a trust fund to provide for toxic waste cleanup when no responsible party could be identified. Additionally, this Act gave EPA power to seek out those parties responsible for any release and assure their cooperation in the cleanup. The law authorizes two kinds of response actions:

  - Short-term Removals: Actions are taken to address releases or threatened releases requiring prompt response.

  - Long-term Remedial Response: Actions are taken to permanently and significantly reduce the dangers associated with releases or threats of releases of hazardous substances that are serious, but not immediately life threatening.

These actions can be conducted only at sites listed on EPA's National Priorities List (NPL). CERCLA also enabled the revision of the National Contingency Plan (NCP). The NCP provided the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, or contaminants. The NCP also established the NPL sites, which is the list of hazardous waste sites eligible for long-term remedial action financed under the federal Superfund program. CERCLA was amended by the Superfund Amendments and Reauthorization Act (SARA) on October 17, 1986.

- Superfund Amendments and Reauthorization Act (SARA)

  The Superfund Amendments and Reauthorization Act (SARA) of 1986 reauthorized CERCLA to continue cleanup activities around the country. Several site-specific amendments, definitions clarifications, and technical requirements were added to the legislation, including additional enforcement authorities.

- Emergency and Community Right to Know Act (EPCRA)

  Also known as Title III of SARA, EPCRA was enacted by Congress as the national legislation on community safety. This law was designated to help local communities protect public health, safety, and the environment from chemical hazards. EPCRA was passed in response to concerns regarding the environmental and safety hazards posed by the storage and handling of toxic chemicals. EPCRA establishes requirements for federal, state and local governments, tribes and industry regarding emergency planning and “Community Right-to-Know” reporting on hazardous and toxic chemicals. The Community Right-to-Know provisions help increase the public’s knowledge and access to information on chemicals at individual facilities, their uses, and releases into the environment. States and communities, working with facilities, can use the information to improve chemical safety and protect public health and the environment. To implement EPCRA, Congress required each state to appoint a State Emergency Response Commission (SERC). The SERC's were required to divide their states into Emergency Planning Districts and to name a Local Emergency Planning Committee for each district.

- Toxic Substances Control Act (TSCA)

  The Toxic Substances Control Act (TSCA) of 1976 was enacted by Congress to give EPA the ability to track the 75,000 industrial chemicals currently produced or imported into the United States. EPA repeatedly screens these chemicals and can require reporting or testing of those that may pose an environmental or human-health hazard. EPA can ban the manufacture and import of those chemicals that pose an unreasonable risk.

- State Agencies and Regulations

  The identification and cleanup, or remediation, of environmentally contaminated properties is regulated by several agencies in California, depending on the size and nature of the site, its past uses, and whether soil or groundwater are impacted.

- California Environmental Protection Agency (Cal/EPA)

  The Cal/EPA was created in 1991 by Governor's Executive Order. The six agencies (Air Resources Board, Department of Pesticide Regulation, Department of Toxic Substances Control, Integrated Waste Management Board, Office of Environmental Health Hazard Assessment and the State Water Resources Control Board) were placed within the Cal/EPA "umbrella" to create a cabinet level voice for the protection of human health and the environment and to assure the coordinated deployment of state resources.

- California Department of Toxic Substances Control (DTSC)

  In California, the DTSC regulates hazardous waste in California primarily under the authority of RCRA and the California Health and Safety Code. The DTSC regulates hazardous waste, cleans up existing contamination and researches ways to reduce the hazardous waste produced in California. In addition, the DTSC develops legislation, coordinates with lawmakers and responds to constituent complaints. The regulations spell out what those who handle hazardous waste must do to comply with the laws.

Under RCRA, DTSC cleans-up or oversees approximately 220 hazardous substance release sites at any given time and completes an average of 125 cleanups each year. Ensuring compliance through inspection and enforcement is an important part of effectively regulating hazardous waste. DTSC conducts roughly 200 inspections a year. DTSC's Criminal Investigations Branch has the only law enforcement officers in the Cal/EPA. These peace officers, with the powers of arrest, and search and seizure, investigate alleged criminal violations of the Hazardous Waste Control Law. They work closely with district attorneys' offices, the federal Environmental Protection Agency, the Federal Bureau of Investigation, and law enforcement personnel in other states.

The California Hazardous Materials Release Response Plans and Inventory Law of 1985 (Business Plan Act) requires that any business that handles hazardous materials prepare a business plan, which must include the following:

- Details, including floor plans, of the facility and business conducted at the site.
- An inventory of hazardous materials that are handled or stored on site.
- An emergency response plan.
- A safety and emergency response training program for new employees with annual refresher courses.

- Hazardous Transportation Materials Regulations

Transportation and use of hazardous materials are the concern of several state and local agencies, including Caltrans, which tracks hazardous materials spills at the District level; the California Highway Patrol (CHP), whose Commercial Vehicle Section includes a Motor Carrier/Licensing & HazMat Regulations Unit; and the state Office of Emergency Services, which responds to hazardous materials emergencies in cooperation with local responders. In addition, state law has established Certified Uniform Program Agencies (CUPA), often housed within local fire departments, to oversee local hazardous materials storage, usage, and disposal.

- California Unified Program Agency (CUPA)

In 1993, the CUPA was created by SB 1082 in order to simplify the process of regulating and managing hazardous materials and hazardous wastes. Rather than having numerous state and local agencies regulating a single business, SB 1082 consolidated the enforcement of several different environmental regulations under the administration of one local agency called a CUPA. The CUPA can be a county, city or JPA (Joint Powers Authority). Under SB 1082, the state required all counties to apply for status as a CUPA. In order to address the needs of cities, some of which already had strong environmental inspection programs in place, the law allowed cities to opt in to the CUPA program as long as they could show that they had the minimum expertise and training to implement the six program elements.

Each CUPA, whether housed in a Fire Department, Environmental Health Department, or some other department within the city or county would consolidate six existing environmental regulation programs with the goal of reducing: 1) the number of regular inspections to each site by combining different inspections into a single visit, and 2) the amount each regulated business paid in inspection fees. The six programs include the following: 1) Hazardous Materials Business Plan/Emergency Response Plan; 2) Hazardous Waste/Tiered Permitting; 3) Underground Storage Tanks; 4) Aboveground Storage Tanks (SPCC only); 5) California Accidental Release Program; and 6) the Uniform Fire Code Hazardous Materials Management Plan. The CUPA designates a Participating Agency (PA) to administer one or more Unified Programs within their jurisdiction on behalf of the CUPA

Environmental Setting

As in many parts of California, the individual cities and Fresno 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.
- 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 Fresno County. For the Fresno 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.
- 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.

Hazardous Waste Sites

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 Fresno 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.

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 Fresno County. There are two treatment, storage and disposal (TSD) facilities in Fresno County, Safety Kleen Corp., and Sigma Medical Imaging.

Hazardous wastes are transported through Fresno 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 contains six hazardous waste transportation routes (SR 33, 41, 63, 99, 180 and 198), 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.

There are sites where soil or groundwater contamination from hazardous materials has occurred. According to Fresno County’s 1988 Hazardous Waste Management Plan, there are twenty “major contaminated sites” and approximately 400 smaller sites. The majority of smaller sites is related to underground storage tanks and is located in the Fresno-Clovis Metropolitan Area (FCMA).

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 project-specific but is a regional analysis.

Environmental Impacts, Mitigation Measures, and Significance After Mitigation

Criteria for Significance

The proposed 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.
- Potential safety risks exist with the transport of hazardous materials.

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

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

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

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

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

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

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

Mitigation Measures

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

Significance After Mitigation

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

Impact 3.8.2 - Release of Hazardous Materials

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

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

Mitigation Measures

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

Significance After Mitigation

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

Impact 3.8.3 The implementation of the 2011 RTP could create a hazard to the public or the environment through the disturbance of contaminated property during the construction of new transportation or expansion of existing transportation facilities.

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

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

Mitigation Measures

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

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

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

Significance After Mitigation

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

Cumulative Impact 3.8.4

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

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

This impact is considered to be significant.

Mitigation Measures

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

Significance After Mitigation

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

3.9 HYDROLOGY & WATER QUALITY

Issues related to surface-water resources, flooding, ground-water 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 County 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 effort by federal, state, and local governments to implement its pollution control measures. This law was the first comprehensive national clean water legislation to protect our nation's waters. In an effort to address pollution and poor water quality, the law uses a framework of standards, technical tools, and financial assistance as. The law is intended to improve the quality of 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 of greater than 100,000 to control urban storm water runoff.

  These plans ensure best management practices to reduce pollutant loads. Water quality thresholds called Total Maximum Daily Loads were also developed for pollutants and other stressors affecting water quality. Finally, in an effort to ensure that the actions will be consistent with the state's water quality requirements, Section 401 of the Clean Water Act grants states the authority to review federal permits or licenses that will result in a discharge or disruption to wetlands and other waters under state jurisdiction.

- Safe Drinking Water Act

  The Safe Drinking Water Act (SDWA) ensures the quality of Americans' drinking water. The law requires actions to protect drinking water and its sources—rivers, lakes, reservoirs, springs and groundwater wells—and applies to public water systems serving 25 or more people. It authorizes the EPA to set national health-based standards for drinking water to protect against both naturally occurring and man-made contaminants. In addition, it oversees the states, municipalities and water suppliers that implement the standards.

  EPA standards are developed as a Maximum Contaminant Level (MCL) for each chemical or microbe. The MCL is the concentration that is not anticipated to produce adverse health effects after a lifetime of exposure, based upon toxicity data and risk assessment principles. EPA's goal in setting MCLs is to assure that even small violations for a period of time do not pose significant risk to the public's health over the long run. National Primary Drinking Water Regulations (NPDWRs or primary standards) are legally enforceable standards that limit the levels of contaminants in drinking water supplied by public water systems.

  Secondary standards are non-enforceable guidelines regulating contaminants that may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water. EPA recommends secondary standards to water systems but does not require systems to comply. However, states may choose to adopt them as enforceable standards.

Federal Agencies

- U.S. Army Corps of Engineers - The Corps of Engineers regulates placement of dredged or fill material in waters of the United States, and regulates work in navigable waters of the United States.

- U.S. Environmental Protection Agency (EPA) - The U.S. Environmental Protection Agency is the federal agency responsible for water quality management and administration of the federal Clean Water Act (CWA). In California, the EPA has delegated most of the administration of the CWA to the State Water Resources Control Board (SWRCB).

- U.S. Fish and Wildlife Service (USFWS) - The U. S. Fish and Wildlife Service (USFWS) administers the Federal Endangered Species Act (FESA) and designates critical habitat for endangered species to carry out its mission to conserve, protect, and enhance the nation's fish and wildlife and their habitats for the continuing benefit of people. Critical habitat areas cannot be disturbed without permission from the USFWS or other federal agencies, depending on land ownership. The USFWS also manages a system of land and waters for the conservation of wildlife and associated ecosystems. These National Wildlife Refuges are primarily managed for the preservation and protection of unique or important resources and ecosystems.

- The Federal Emergency Management Agency (FEMA)

  The U.S. Congress passed the National Flood Insurance Act in 1968 and the Flood Disaster Protection Act in 1973 in order to restrict certain types of development on floodplains and provide for a national flood insurance program. The purpose of these programs is to reduce the need for large publicly funded flood control structures and disaster relief.

  FEMA classifies flood hazard zones as follows:

  - Zone A – Areas of 100 year flood. Base flood elevations and flood hazard factors are not determined.
  - Zone B – Areas between the limits of the 100-year flood and 500 year flood; or certain areas subject to the 100 year flooding with average depth of less than one foot; or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood.
  - Zone C – Areas of minimal flooding not requiring flood insurance.

- The U.S. Bureau of Reclamation (USBR)

  The USBR operates the Colorado River project, an extensive network of dams, canals and related facilities. USBR serves as Watermaster overseeing contentious water rights issues, and runs drought protection programs.

State Agencies

- California State Water Resource Control Board (SWRCB) - The SWRCB was established through the California Porter Cologne Water Quality Act of 1969. It is the primary State agency responsible for water quality management issues in California.

- 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. The 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 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 habitat in legally designated ecological reserves or wildlife areas.

- Delta Water Agency - The Delta Agency was established in 1965 for maintenance of agricultural water quality throughout the Delta. In 1973, the agency was replaced by the following three 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 the regional plan are to protect, maintain and, where possible, enhance and restore the overall quality of the delta environment, including but not limited to, agriculture, wildlife habitat, and recreational activities.

- The Department of Water Resources (DWR)

  The DWR is responsible for the planning, construction and operation of State Water Project (SWP) facilities, including the California Aqueduct, and sets conditions on use of SWP facilities. In addition, DWR is responsible for statewide water planning, evaluating urban water management plans, overseeing dam safety and flood control, and transfer of certain water rights permits (e.g., pre-1914).

- The California Department of Public Health33 (DPH)

  DPH implements the SDWA. In addition, it oversees the operational permitting and regulatory oversight of public water systems. DPH requires public water systems to perform routine monitoring for regulated contaminants that may be present in their drinking water supply. To meet water quality standards and comply with regulations, a water system with a contaminant exceeding an MCL must notify the public and remove the source from service or initiate a process and schedule to install treatment for removing the contaminant. Health violations occur when the contaminant amount exceeds the safety standard (MCL) or when water is not treated properly. In California, compliance is usually determined at the wellhead or the surface water intake. Monitoring violations involve failure to conduct or to report in a timely fashion the results of required monitoring.

  In addition, DPH conducts water source assessments, oversees water recycling projects, permits water treatment devices, certifies water system employees, promotes water system security, and administers grants under the State Revolving Fund and State bonds for water system improvements.

- The California Department of Toxic Substances Control (DTSC)

  DTSC is responsible for oversight of hazardous substances and remediation of contaminated sites, including in some cases water sources.

- Porter Cologne Water Quality Control Act

  The Porter Cologne Water Quality Control Act of 1967 (Water Code Section 13000 et seq.) requires the SWRCB and the nine RWQCBs to adopt water quality criteria to protect State waters. These criteria include the

identification of beneficial uses, narrative to the applicable and numerical water quality standards, and implementation procedures.

The Porter-Cologne Water Quality Control Act authorizes the state boards to adopt, review and revise policies for all waters of the state (including both surface and ground waters) and directs the regional boards to develop Basin Plans. The act also authorizes state boards to adopt Water Quality Control Plans. In the event of inconsistencies among state and regional board plans, the more stringent provisions apply.

Environmental Setting

Hydrology

- Drainage Patterns

Fresno County straddles two hydrologic regions, the San Joaquin region in the northern third of the county and the Tulare Lake region in the southern two-thirds of the county. In the Tulare Lake region, the majority of the water drains into the Kings River that flows west from the Sierra Nevada to the Valley, which historically terminated at the now-dry Tulare Lake. In the San Joaquin region, the remaining area drains into the San Joaquin River, which flows into counties north of Fresno County. In both regions, the coastal foothills are drained by small creeks eastward toward the Fresno Slough on the valley floor (reference Figure 3-7).

- Surface Waters

There are numerous surface water sources in the area, including lakes, rivers, and streams. In addition, there are numerous creeks and canals. A number of wetland and vernal pool areas also exist.
The San Joaquin River and the Kings River are the primary natural surface water sources within Fresno County. Both rivers originate in the Sierra Nevada's and flow toward the valley floor. The San Joaquin River's approximate annual run-off is 1,600,000 acre-feet (an acre-foot is 325,851 gallons). The Kings River's annual run-off is very similar to that of the San Joaquin River.

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 usually underlain by semi-impermeable soils, which restrict percolation into the water table below, resulting in pools that often last from winter to summer. California has lost a greater proportion of its original wetlands than has any other state. As such, wetlands protection in general is a challenge here, as it is in the rest of the country. The regulation of wetlands falls mainly with the U.S. Army Corps of Engineers, through the authority of Section 404 of the Clean Water Act. Wetlands as a biological resource habitat are discussed further in the Biotics section of this report.

The San Joaquin River and the Kings River are the only two navigable rivers for recreation purposes in Fresno County. There are no waterways navigable by commercial vessels.

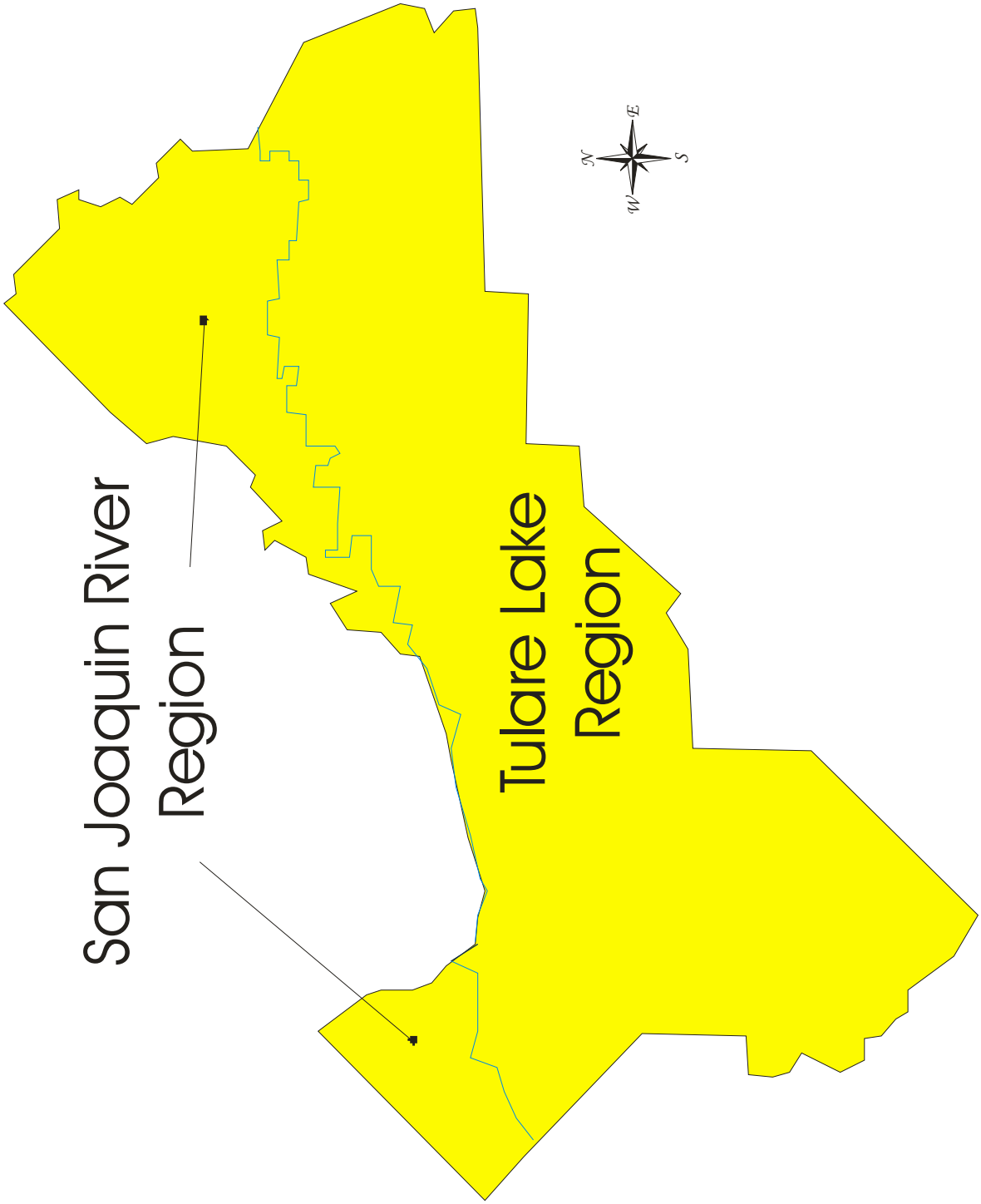


FIGURE 3-7
Fresno COG 2011 RTP Draft SEIR
Hydrologic Regions in Fresno County

- Flooding

The Valley portions of Fresno County can receive between six and ten inches of precipitation annually on average, while the mountainous areas can receive up to 70 inches per year. Flooding in Fresno County can occur as a result of natural phenomena such as heavy rains, excessive snowmelt and runoff; as a result of man-made structural problems, such as dam failure, levee failure, and localized drainage problems; or any combination thereof. Flooding usually occurs during the late fall and winter due to rainfall, and late spring to early summer due to snowmelt.

The principal impact of flooding includes 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, ruining crops, further undermining and damaging infrastructure, and contaminating water wells.

Flooding generally occurs 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 flood plain. These river floods usually result from heavy rain, sometimes combined with melting snow, which causes the rivers to overflow their banks. Floods in the mountain region are typically confined to narrow valleys, where flood flows from streams or rivers peak quickly and have high velocities. 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.

Flooding occasionally occurs on streets and roads where storm waters are diverted into man-made or artificial drainage systems in urbanized areas. Storm water is not able to permeate and percolate into the soil in urbanized areas with significant surface areas covered with impervious surfaces and is, therefore, diverted into a storm drainage system. Storm drainage systems can include street gutters, underground storm drains, retention/detention basins, pumping stations, and open channels. In some areas, these drainage systems are occasionally overloaded with storm water drainage, or the drains become clogged with leaves or other debris and impede storm water drainage from transportation facilities. The ability of the storm drainage system to accommodate water flows is also largely based on ground permeability and infrastructure capacity. In the metropolitan area, local cities and counties are the agencies responsible for maintaining and upgrading drainage facilities to accommodate water volume.

A system of reservoirs serves as large-scale flood control basins. Strategic management of reservoir releases and the use of canals serve to minimize the likelihood of flooding, by rerouting of water around populated areas. However, substantial flooding can result from dam failure. According to the County of Fresno and the California Department of Water Resources, there are 33 dams within the County, and four of which could cause substantial flooding in Fresno County, which are Friant Dam, Big Dry Creek Dam, Redbank-Fancher Creek Project Dams, and Pine Flat Dam. Dam failure could result from earthquakes, erosion, improper siting, rapidly rising floodwaters and structural and design flaws.

Fresno County has historically been vulnerable to flooding, due to the network of rivers that run through the valley and the adjacent low-lying terrain. Accordingly, the U.S. Department of Housing and Urban Development (HUD) has designated portions of Fresno County as special Flood Hazard areas. In compliance with the Federal Flood Insurance Program, HUD has provided Fresno County with a series of Flood Boundary Maps. These maps, which delineate major areas of flooding throughout the County, are on file in the Fresno County Planning Department, and hereby incorporated by reference.

A 100-year flood is defined as a flood event that has a one percent chance of occurring in any given year, and is more or less a statistical probability. Many low-lying areas near rivers in Fresno are located in the 100-year floodplain. This type of flood is determined for the purposes land use planning and protection of property and human safety. The Federal Emergency Management Act (FEMA) determines areas subject to flooding in general, as well as the 100-year flood hazard.

- Groundwater Resources

In addition to surface water systems, groundwater is a significant water resource. Groundwater is water that is stored underground, typically between saturated soil and rock. 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 amounts of groundwater recharge.

Water Supply and Quality

Water is an important resource for Fresno County. It is necessary for the production of crops in one of the largest agricultural producing regions in the state/nation, as well as meeting the needs of its approximately 800,000 inhabitants. Domestic water use in Fresno County is composed of approximately fifty-six (56) percent groundwater and forty-four (44) percent surface water[5].

Water quality is generally determined by the concentrations of harmful trace elements and the condition of salinity.

- Surface Water

Fresno County is located in the state's Regional Water Quality Control system and is marked by an abundance of surface water resources. Surface water systems in Fresno County are generally characterized by a series of reservoirs that collect and store snowmelt in the upper elevations of the Sierra. These include Pine Flat Dam on the Kings River and Friant and Mendota Dams on the San Joaquin River. These and other lakes and reservoirs within the Valley have been developed over the years by Southern California Edison Company, the Army Corps of Engineers, and Pacific Gas and Electric Company. Water stored in the reservoirs is typically used for hydro-generation then released into natural rivers. Most of the water is then captured into lower elevation reservoirs in the foothills and stored for transmission in irrigation canals. These facilities are owned and operated by a number of public agencies including the U.S. Bureau of Reclamation, Southern California Edison, and several local irrigation and water districts. The water supply varies, however, depending on the particular area and season. Many communities within the San Joaquin Valley must supplement natural surface water with water diverted from other sources. A major source is the State Water Project's California Aqueduct.

Water "banking" also occurs among San Joaquin Valley communities in order to preserve water for future use. The City of Fresno and local water agencies operate a recharge facility, "Leaky Acres" within the City of Fresno where surplus water is recharged for withdrawal in drier years.

[5] California Department of Water Resources, Annual Data, 2001.

According to the County of Fresno, surface water in Fresno County is typically of good quality for agricultural irrigation and municipal and industrial uses. The concentration of total dissolved solids (TSDs) is typically low and harmful levels of trace elements are not present. Accordingly, conventional water treatment processes are used. However, bacterial counts and parasite cysts loads are emerging concerns. The streams on the western side of the County contain large volumes of sediment and naturally occurring minerals such as selenium, arsenic, boron and asbestos.

- Groundwater

Use of groundwater has produced serious overdraft in some areas of the County and has resulted in constraints to the availability of water supplies. The California Water Plan Update 2005 identifies the Tulare Lake Basin, which the majority of Fresno County is in, as being in a critical condition of overdraft. Overdraft can lead to numerous issues, such as increased extraction costs, land subsidence, water quality degradation, and environmental impacts. In reaction to drought conditions, nearly all communities in the region have introduced water conservation programs.

The groundwater situation in the Valley is ideal; high clay content and other impervious sediments in the soils sometime known as "Corcoran Clay", combined with a low water table, make it difficult for contaminants to reach the groundwater supply. 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 Fresno 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.

Groundwater in some localized areas contain elevated levels of boron, dibromochloropropane (DBCP), dichloroethylene (DCE), nitrates, selenium, sulfates, and trichloroethylene (TCE). Groundwater in the western Valley floor area is highly saline and contains other toxic elements resulting from water percolation through marine sediments, and is not suitable for use. Naturally occurring arsenic is a concern for domestic well water supplies.

- Storm Water Runoff

Storm water runoff in the urbanized portions of Fresno 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.

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

To determine the actual potential for significant impacts on hydrology and water quality resulting from implementation of transportation improvements, 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 areas that 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. Project construction could affect these uses if not mitigated.

A proposed individual improvement project would be likely to have a greater impact on water resources in areas where proposed transportation improvements are directly adjacent to or crosses a drainage facility or water body, and in areas where projects are located in 100-year flood hazard areas, than projects further from drainage facilities, water bodies, or 100-year flood hazard areas.

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, which 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, which would result in flooding on- or off-site.
- Create or contribute runoff water, which would exceed the capacity of existing or planned storm water drainage systems to control.
- Otherwise substantially degrade water quality.
- Place within a 100-year floodplain structures, which would impede or redirect flood flows.

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 which, 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 individual 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 nonpoint-source pollutants generated regionally could occur. In general, they would be attributed to increases in impervious surface area associated with paving, combined with increased overall regional traffic. These nonpoint source pollutants include oil and grease, petroleum hydrocarbons, metals and possibly nutrients. The paving required for highway projects could have minor effects on the amount of surface water that filters into the ground. Pollutants in the runoff from proposed transportation facilities could affect groundwater basins.

Impact 3.9.1 – Impacts on Water Quality

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 a significant level.

Impact 3.9.2 – Impacts on Groundwater

The installation of transportation infrastructure and expansion of Project facilities could encounter groundwater. Individual projects may require dewatering during construction and for the life of the 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 should provide monitoring systems including long-term administrative procedures to ensure proper operations for the life of the Project.

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 a significant level.

Impact: 3.9.3 – Increased Flood Hazards

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 should be conducted by responsible agencies for new capacity-increasing projects. Drainage systems should 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 should 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.

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 a significant level.

Impact: 3.9.4 – Impacts from Construction Runoff

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 a significant level.

Cumulative Impact 3.9.5

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

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

Mitigation Measures

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

- Local governments should encourage Low Impact Development and natural spaces that reduce, treat, infiltrate and manage stormwater runoff flows in all new developments.
- Local governments should implement green infrastructure and water-related green building practices through incentives and ordinances. Green building resources include the U.S. Green Building Council's Leadership in Energy and Environmental Design, Green Point Rated Homes, and the California Green Builder Program.
- Local governments should integrate water resources planning with existing greening and revitalization initiatives, such as street greening, tree planting, development and restoration of public parks, and parking lot conversions, to maximize benefits and share costs.
- Developers, local governments, and water agencies should maximize permeable surface area in existing urbanized areas to protect water quality, reduce flooding, allow for groundwater recharge, and preserve wildlife habitat. New impervious surfaces should be minimized to the greatest extent possible, including the use of in-lieu fees and off-site mitigation.
- Future impacts to water quality shall be avoided through cooperative planning, information sharing, and comprehensive pollution control measure development.
- Local jurisdictions and water agencies are encouraged to continue regional-scale planning for improved stormwater management and groundwater recharge. Future adverse impacts shall be avoided through cooperative planning, information sharing, and comprehensive implementation efforts.
- Local governments should prevent development in flood hazard areas that do not have appropriate protections, especially in alluvial fan areas of the region.

- Local jurisdictions should encourage new development and industry to locate in those service areas with existing wastewater infrastructure and treatment capacity, making greater use of those facilities prior to incurring new infrastructure costs.
- Wastewater treatment agencies are encouraged to have expansion plans, approvals and financing in place once their facilities are operating at 80 percent of capacity.
- Local jurisdictions should promote reduced wastewater system demand by: designing wastewater systems to minimize inflow and increase upstream treatment and infiltration to the extent feasible, reducing overall source water generation by domestic and industrial users, deferring development approvals for industries that generate high volumes of wastewater until wastewater agencies have expanded capacity.
- Project developers and agencies should consider potential climate change hydrology and attendant impacts on available water supplies and reliability in the process of creating or modifying systems to manage water resources for both year round use and ecosystem health.
- Local water agencies should continue to evaluate future water demands and establish the necessary supply and infrastructure to meet that demand.
- Developers, local governments, and water agencies should include conjunctive use as a water management strategy when feasible.
- Developers and local governments should reduce exterior uses of water in public areas, and should promote reductions in private homes and businesses, by shifting to drought-tolerant native landscape plantings (xeriscaping), using weather-based irrigation systems, educating other public agencies about water use, and installing related water pricing incentives.
- Future impacts to water supply shall be minimized through cooperation, information sharing, and program development.

Significance After Mitigation

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

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

3.10 LAND USE & PLANNING

This section of the EIR contains an overview of land use regulations in Fresno 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

- 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.

- 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 Fresno 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

  Fresno County includes the Cities of Fresno and Clovis in addition to several smaller 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

  Unincorporated areas of the County contain a population of approximately 176,350 persons, or 22 percent of Fresno County's total population. In addition to large State and federally owned areas, a number of unincorporated communities are located in Fresno County. These communities, as well as other unincorporated areas are governed by the Fresno County General Plan adopted in 2000.

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 Fresno is designated as the agency responsible for carrying out functions of the Fresno 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 nine airports affected, in the cities of Fresno, Firebaugh, Mendota, Coalinga, Reedley, and Harris Ranch.

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 cities of Fresno and Clovis will remain the predominant urban centers in Fresno 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.

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 RTP, the following significance criteria were used. The 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.
- Physically divide an established community.

Impact 3.10.1 – Land Use Impacts

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 such as 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 RTP and a separate program has been included in the RTP to develop Transit Oriented Infrastructure for In-Fill Development (TOD). The program will establish transportation facilities in new or revitalized developments to increase transit use and encourage higher density and mixed land use planning. This program will utilize approximately $20 million to facilitate public incentives for alternative transportation practices. 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. Fresno COG will be provided with documentation indicating compliance with all mitigation measures.

- Individual projects will be consistent with local land use plans and policies that designate areas for urban land use and preserve agricultural lands that support the economic viability of agricultural activities.
- Prior to final approval of each individual improvement project, the implementing agency will conduct the appropriate project-specific environmental review, including consideration of potential land use impacts.

Significance After Mitigation

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

Impact 3.10.2 – Impacts on Sensitive Receptors

There are many sensitive receptors (residences, educational facilities, medical facilities, and places of worship) located in the urban and rural areas of the County. These receptors may be sensitive to noise, vibration, air pollutants, and other conditions that impact our environment. 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 due to noise, dust, vibration, etc. 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. These possible impacts would depend on several factors such as the type of Proposed for the area, projected land use designation of the area, and duration of proposed construction activities.

Generally, proposed projects are of the following two types:

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

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. Fresno 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, project implementation agencies will obtain necessary local permits and meet conditions for approval from applicable cities and counties.

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

- Potential significant impacts to land uses will be mitigated.

Significance After Mitigation

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

Impact 3.10.3 – Loss of Open Space and Community Recreation Areas

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. Development of RTP projects and programs 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 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. Fresno COG will be provided with documentation indicating compliance with all mitigation measures.

- Project implementation agencies will ensure that projects are consistent with federal, state, and local plans that preserve open space and recreation.

- Project 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, project implementation agencies will comply with Section 4(f) of the U.S. Department of Transportation Act.

Significance After Mitigation

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

Impact 3.10.4 – Loss of Agricultural Resources

Implementation of the proposed RTP could potentially result in the disturbance or loss of significant agricultural resources throughout the Fresno 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 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. Fresno 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, project implementation agencies will contact the California Department of Conservation and the County Agricultural Commissioner's office to identify the location of prime farmlands and lands that support crops considered valuable to the local or regional economy.

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

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

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

Significance After Mitigation

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

Impact 3.10.5 – Inconsistency with Local Land Use Plans

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 Fresno COG. For this reason, it is unlikely that any individual improvement project submitted would be inconsistent with a local jurisdiction's plan.

Mitigation Measures

- No mitigation measures are necessary.

Significance After Mitigation

Not applicable.

Cumulative Impact 3.10.6

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

Mitigation Measures

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

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

Significance after Mitigation

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

3.11 NOISE

This section provides information about the effects of noise from the Project. The methodology and the criteria used to evaluate the significance of noise-related impacts as well as mitigation measures are discussed.

Description of Noise and Terminology

Noise is often described as unwanted sound, and thus is a subjective reaction to characteristics of a physical phenomenon. Researchers have generally agreed that A-weighted sound pressure levels (sound levels) are well correlated with subjective reaction to noise. Variations in sound levels over time are represented by statistical descriptors, and by time-weighted composite noise metrics such as the Day/Night Average Level (Ldn). The unit of sound level measurement is the decibel (dB), sometimes expressed as dBA. Throughout this analysis, A-weighted sound pressure levels will be used to describe traffic noise.

Sound is defined as any pressure variation in air that the human ear can detect. If the pressure variations occur frequently enough (at least 20 times per second), they can be heard, and hence, are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second, called hertz (Hz) by international agreement. The speed of sound in air is approximately 770 miles per hour, or 1,130 feet/second. Knowing the speed and frequency of a sound, one may calculate its wavelength; the physical distance in air from one compression of the atmosphere to the next. An understanding of wavelength is useful in evaluating the effectiveness of physical noise control devices such as mufflers and barriers, which depend upon either absorbing or blocking sound waves to reduce sound levels. Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold of 20 micropascals as a point of reference, defined as 0 dB. Other sound pressures are then compared to the reference pressure, and the logarithm is taken to keep the numbers in a practical range.

The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB. Another useful aspect of the decibel scale is that changes in levels (dB) correspond closely to human perception of relative loudness. The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by weighting the frequency response of a sound level measurement device (called a sound level meter) by means of the standardized A-weighting network. There is a strong correlation between A-weighted sound levels (expressed as sound levels in dB) and community response to noise. For this reason, the A-weighted sound pressure level has become the standard tool of environmental noise assessment.

Community noise is commonly described in terms of the "ambient" noise level, which is defined as the all-encompassing noise level associated with a given noise environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (Leq), which corresponds to a steady-state sound level containing the same total energy as a time-varying signal over a given time period (usually one hour). The Leq is the foundation of the composite noise descriptors such as Ldn, and shows very good correlation with community response to noise.

Two composite noise descriptors are in common use today: Ldn (Day-night Average Level) and CNEL (Community Noise Equivalent Level). The Ldn is based upon the average hourly Leq over a 24-hour day, with a +10 decibel weighting applied to nighttime (10:00 p.m. to 7:00 a.m.) Leq values. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. The CNEL, like Ldn, is based upon the weighted average hourly Leq over a 24-hour day, except that an additional +4.8 decibel penalty is applied to evening (7:00 p.m. to 10:00 p.m.) hourly Leq values. The CNEL was developed for

the California Airport Noise Regulations, and is applied specifically to airport/aircraft noise assessment. For this reason, the Ldn descriptor, rather than CNEL, is used for the assessment of traffic noise levels in the County.

Noise in the community has often been cited as being a health problem, not in terms of actual damage such as hearing impairment, but in terms of inhibiting general well-being and contributing to undue stress and annoyance. The health effects of noise in the community arise from interference with human activities such as sleep, speech, recreation, and tasks demanding concentration or coordination. When community noise interferes with human activities or contributes to stress, public annoyance with the noise source increases, and the acceptability of the environment for people decreases. This decrease in acceptability and the threat to public well-being are the bases for land use planning policies preventing exposure to excessive community noise levels.

To control noise from fixed sources, which have developed from processes other than zoning or land use planning, many jurisdictions have adopted community noise control ordinances. Such ordinances are intended to abate noise nuisances and to control noise from existing sources. They may also be used as performance standards to judge the creation of a potential nuisance, or potential encroachment of sensitive uses upon noise-producing facilities. Community noise control ordinances are generally designed to resolve noise problems on a short-term basis (usually by means of hourly noise level criteria), rather than on the basis of 24-hour or annual cumulative noise exposures.

Noise ordinance criteria are not applicable to traffic on public roadways. However, General Plan Noise Elements provide noise standards for new noise-sensitive land uses affected by transportation noise sources. General Plan Noise Elements frequently contain general noise mitigation measures for use in reducing the potential for adverse noise impacts associated with the development of new noise-sensitive or noise-producing land uses.

For new noise-sensitive land uses affected by transportation noise sources, many jurisdictions consider land use compatibility criteria of 60 to 65 dB Ldn as being “normally acceptable” for such uses. Typical options for mitigation of excessive traffic noise levels include the use of setbacks or buffer areas between the roadways and the proposed noise-sensitive land use, noise barriers, residential unit design and improvements to building facade construction. Because many rural residential areas experience very low noise levels, residents may express concern about the loss of "peace and quiet" due to the introduction of a sound, which was not audible previously. In very quiet environments, the introduction of virtually any change in local activities will cause an increase in noise levels. A change in noise level and the loss of "peace and quiet" is the inevitable result of land use or activity changes in such areas. Audibility of a new noise source or increases in noise levels within recognized acceptable limits are not usually considered to be significant noise impacts, but these concerns should be addressed and considered in the planning and environmental review processes.

Regulatory

In general, the federal government sets noise standards for transportation noise sources that are related to interstate commerce. These typically include aircraft, trains, and trucks. State governments establish noise standards for those sources not regulated by federal standards such as automobiles, light trucks, motor boats and motorcycles. Other noise sources associated with construction, as well as industrial, and commercial activities are usually regulated by noise ordinances and general plan policies, which are established by local jurisdictions.

Federal Regulations

The Federal Highway Administration has established noise abatement criteria that must be considered for the design of federal or federally funded highway projects. Federal regulations also set noise limits for medium and heavy trucks (over 4.5 gross tons). The federal standard for truck pass by noise at 15 meters (50 feet) is 80 dB. These standards are implemented through federal regulatory controls on truck manufacturers. Noise generated from aircraft operated in the United States is also subject to federal regulation, which is established by the Federal

Aviation Administration. Aircraft manufacturers must comply with these regulations prior to certification of the aircraft. Similarly, locomotives are also subject to federal standards.

- Federal Aviation Administration (FAA)

  Aircraft operated in the U.S. are subject to certain federal requirements regarding noise emissions levels. These requirements are set forth in Title 14 CFR, Part 36. Part 36 establishes maximum acceptable noise levels for specific aircraft types, taking into account the model year, aircraft weight, and number of engines. Pursuant to the federal Airport Noise and Capacity Act of 1990, the FAA established a schedule for complete transition to Part 36 "Stage 3" standards by year 2000. This transition schedule applies to jet aircraft with a maximum takeoff weight in excess of 75,000 pounds, and thus applies to passenger and cargo airlines, but not to operators of business jets or other general aviation aircraft.

  Although the National Environmental Policy Act (NEPA) does not establish specific noise standards, the noise impacts of projects are routinely considered as one of the potential environmental consequences of federal actions subject to NEPA.

- Federal Vibration Policies

  The Federal Railway Administration (FRA) and the Federal Transit Administration (FTA) have published guidance relative to vibration impacts. According to the FRA, fragile buildings can be exposed to groundborne vibration levels of 0.5 PPV without experiencing structural damage. The FTA has identified the human annoyance response to vibration levels as 80 VdB.

State Regulations

The State sets standards for light trucks (less than 4.5 gross tons), passenger cars, and other motor vehicles as identified in the California Motor Vehicle Code. The State of California has also established additional noise standards to regulate freeway noise affecting schools and classrooms. Furthermore, the State has adopted noise insulation standards for multi-family residential units, hotels, and motels that are in areas subject to high levels of transportation-related noise.

- California's Airport Noise Standards

  The State of California has the authority to establish regulations requiring airports to address aircraft noise impacts on land uses in their vicinities. The State of California's Airport Noise Standards, found in Title 21 of the *California Code of Regulations*, identify a noise exposure level of CNEL 65 dB as the noise impact boundary around airports. Within the noise impact boundary, airport proprietors are required to ensure that all land uses are compatible with the aircraft noise environment or the airport proprietor must secure a variance from the California Department of Transportation.

- California Department of Transportation (Caltrans)

  The State of California establishes noise limits for vehicles licensed to operate on public roads. For heavy trucks, the State passby standard is consistent with the federal limit of 80 dB. The State passby standard for light trucks and passenger cars (less than 4.5 tons gross vehicle rating) is also 80 dB at 15 meters from the centerline. For new roadway projects, Caltrans employs the Noise Abatement Criteria, discussed above in connection with FHWA.

- California Noise Insulation Standards

  The California Noise Insulation Standards found in the California Code of Regulations, Title 24, set requirements for new multi-family residential units, hotels, and motels that may be subject to relatively high levels of transportation-related noise. For exterior noise, the noise insulation standard is DNL 45 dB in any habitable room and requires an acoustical analysis demonstrating how dwelling units have been designed to meet this interior standard where such units are proposed in areas subject to noise levels greater than DNL 60 dB.

- State Vibration Policies

  There are no adopted state policies or standards for ground-borne vibration. However, Caltrans recommends that extreme care be taken when sustained pile driving occurs within 7.5 meters (25 feet) of any building, and 15 to 30 meters (50 to 100 feet) of a historic building or a building in poor condition.

Local Regulations

The noise element and local noise ordinances are the two primary documents that local jurisdictions use to set noise standards in their community. A noise element is a required component of each jurisdiction's General Plan. The noise element is required to analyze the current and future noise levels associated with local noise sources, such as freeways and freeways, major streets and arterials, rail operations, aviation activities and local industrial plants and develop noise contours for these sources using CNEL or Ldn.

The noise element also includes implementation measures and possible solutions for existing and potential noise problems. The noise elements of the cities and the County typically apply land use compatibility criteria of 60-65 dB Ldn as being normally acceptable for new residential developments affected by transportation noise sources. The intent of these standards is to provide an acceptable noise environment for outdoor activities. In addition, an interior noise level criterion of 45 dB Ldn is commonly applied to residential land uses. The intent of this standard is to provide a suitable environment for indoor communication and sleep. These criteria are consistent with the interior and exterior noise level standards applied by the Federal Department of Housing and Urban Development (HUD).

The above-described noise standards are commonly applied to new residential projects affected by transportation noise sources, rather than the increase in traffic noise levels resulting from regional growth, such as in this study. Nonetheless, the local noise criteria are included to provide a frame of reference by which the magnitude of existing and future traffic noise levels can be compared.

Major Noise Sources in Fresno 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 Fresno 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
- 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 Fresno County are the Union Pacific Transportation Company (UP) and the Burlington, Northern and Santa Fe (BNSF). Numerous freight train operations per day occur on the UP and BNSF lines that extend from their respective yards in Fresno to points north and south of the County. Six (6) northbound and six (6) southbound passenger rail operations occur each day on the BNSF lines.

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 Fresno County.

- Airport Noise

Fresno 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 nine (9) public use airport facilities in Fresno County (reference Chapter 4 of the 2011 RTP). 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.

- Other Noise Sources

  There is a wide variety of industrial and other non-transportation noise sources in the County, including manufacturing operations, 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.
- Expose people to generation of excessive ground borne vibrations or ground borne noise.

Impact 3.11.1 – Transportation Noise Impacts

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).
- *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.

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 project implementing agency or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to construction. Fresno COG will be provided with documentation indicating compliance with mitigation measures.

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

- Project 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 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 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.

- Project 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.

- The Project 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.

- Project 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.

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

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

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

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

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

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

Significance After Mitigation

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

Impact 3.11.2

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

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

Mitigation Measures

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

Significance After Mitigation

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

Cumulative Impact 3.11.3

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

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

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

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

Mitigation Measures

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

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

Significance after Mitigation

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

3.12 POPULATION, HOUSING & EMPLOYMENT

This section provides information about population, housing, and employment in the Fresno region. CEQA defines population impacts to include changes to the location, distribution, density, or growth rate of the human population, while housing impacts relate to alterations in existing housing or the creation of demand for additional housing. The environmental setting and methodology used to evaluate the potential impacts of projects associated with implementation of the Project are described. The criteria used to evaluate the significance of those impacts, potential impacts resulting from those projects, and mitigation measures are discussed.

Regulatory Setting

Location of population, housing and employment follow land use regulations, see Section 3.10

Environmental Setting

New Patterns of Development and Travel

The Fresno region has evolved into a different kind of place since the 1970s, when downtown Fresno was by far the largest job center. Today, north Fresno, Clovis and other employment centers have developed to where they have as many or more jobs as downtown Fresno. 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 the FCMA 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. Some of the edge communities show a better balance between jobs and housing, but about half of the region's jurisdictions do not have a mix of housing affordable to all those who work there.

Population and Employment Estimates and Projections

Every two to three years, Fresno COG updates its growth forecasts for housing, population, and employment. The current set of Fresno COG population and employment projections are provided in Tables 3-16 and 3-17. Employment projections are available for the Year 2025. These projections reflect a consensus of local government agencies on anticipated development of the region over the next 20 to 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 Fresno region is expected to grow by almost 400,000 people, an increase of less than 56 percent, between 2005 and 2030. Total population in the Fresno region in 2030 is projected to be 1.4 million.

TABLE 3-16
Population of Fresno County
1970 - 2035

Date	Fresno County	California	Fresno County Share of California Population
April 1970	413,100 [1]	19,053,100 [1]	2.2%
April 1980	514,600 [1]	23,667,900 [1]	2.2%
April 1990	667,500 [1]	29,760,000 [1]	2.2%
April 2000	799,407 [1]	33,871,648 [1]	2.4%
July 2005	888,873 [2]	36,899,392 [2]	2.4%
July 2010	991,922 [2]	39,135,676 [2]	2.5%
July 2015	1,086,843 [3]	41,560,669 [2]	2.6%
July 2020	1,185,766 [3]	44,135,923 [2]	2.7%
July 2025	1,290,481 [3]	46,618,582 [2]	2.8%
July 2030	1,402,727 [3]	49,240,891 [2]	2.8%
July 2035	1,519,325 [3]	51,692,474 [2]	2.9%

Sources: [1] U.S. Bureau of the Census
[2] Based on Central California Futures Institute forecast
[3] State of California Department of Finance

Jobs-Housing Ratio

The study of jobs-housing balance continues in urban and urbanizing regions across the country as a land-use strategy with the potential to improve regional air quality and mobility. The premise assumes that land-use policy can create a balanced mix of housing and employment opportunities, which in turn can reduce commuting distances and associated air pollution.

The primary objective for many jurisdictions is to improve mobility by reducing total vehicle miles traveled (VMT), both work and non-work related. Therefore, improving or worsening jobs-housing balance would not result in a beneficial or adverse impact in and of itself, but the resultant effects on mobility, congestion, and air quality may comprise significant secondary impacts. A jurisdiction is considered housing rich if the ratio is less than 1.10 and job rich if the ratio is above 1.30.

Methodology

To identify and evaluate impacts associated with the Project, improvements were reviewed to identify the projects that might affect population or housing. The evaluation of impacts is based on general descriptions of projects contained in the Project and is regional in nature. The evaluation is not project-specific, and is intended to serve as a resource to jurisdictions and Caltrans for conducting site-specific environmental review for specific projects.

TABLE 3-17

Population Estimates - Fresno County Jurisdictions 1970 - 2009

	1970		1980		1990		2000		2009	
Jurisdiction	Population	Percent Share of County	Population	Percent Share of County	Population	Percent Share of County	Population	Percent Share of County	Population	Percent Share of County
Clovis	13,856	3.4%	33,021	6.4%	50,323	7.5%	68,516	8.6%	95,128	10.1%
Coalinga	6,161	1.5%	6,593	1.3%	8,212	1.2%	15,798	2.0%	19,109	2.0%
Firebaugh	2,517	0.6%	3,740	0.7%	4,429	0.7%	5,743	0.7%	6,807	0.7%
Fowler	2,239	0.5%	2,496	0.5%	3,394	0.5%	4,046	0.5%	5,671	0.6%
Fresno	165,972	40.2%	217,346	42.2%	354,091	53.0%	427,652	53.5%	495,913	52.6%
Huron	1,525	0.4%	2,768	0.5%	4,766	0.7%	6,310	0.8%	7,836	0.8%
Kerman	2,667	0.6%	4,002	0.8%	5,448	0.8%	8,548	1.1%	14,064	1.5%
Kingsburg	3,843	0.9%	5,115	1.0%	7,245	1.1%	9,231	1.2%	11,427	1.2%
Mendota	2,705	0.7%	5,038	1.0%	6,821	1.0%	7,890	1.0%	9,870	1.0%
Orange Cove	3,392	0.8%	4,026	0.8%	5,604	0.8%	7,722	1.0%	10,930	1.2%
Parlier	1,993	0.5%	2,902	0.6%	7,938	1.2%	11,145	1.4%	13,555	1.4%
Reedley	8,131	2.0%	11,071	2.2%	15,791	2.4%	20,756	2.6%	25,723	2.7%
Sanger	10,088	2.4%	12,542	2.4%	16,839	2.5%	18,931	2.4%	25,417	2.7%
San Joaquin	1,506	0.4%	1,930	0.4%	2,311	0.3%	3,270	0.4%	4,060	0.4%
Selma	7,459	1.8%	10,942	2.1%	14,757	2.2%	19,444	2.4%	23,301	2.5%
Unincorporated Fresno County	179,275	43.4%	191,089	37.1%	159,521	23.9%	164,405	20.6%	173,487	18.4%
Fresno County	413,329	100.0%	514,621	100.0%	667,490	100.0%	799,407	100.0%	942,298	100.0%

Sources: 1970, 1980, 1990 and 2000 U.S. Censuses and 2009 State of California Department of Finance report
Source: Fresno COG Web Site, March 2006

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.
- Causes community disruption. Implementation of the Project would have a potentially significant impact if it results in permanent alterations to the characteristics and qualities of an existing neighborhood or community,

particularly in cases where access to a neighborhood or commercial district is restricted. A significant impact would also result if residences are separated from community facilities and services, or community amenities are lost. Finally, a significant impact would occur if the Project results in temporary disruption to or restriction of access within neighborhoods or commercial areas during construction. It is assumed that most projects have the potential for short-term construction impacts at some level, with the exception of minor operational improvements.

Impact 3.12.1 – Impacts on Regional Growth and Dispersion

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 socioeconomic conditions of the region. One of the strategic issues is growth. 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 Fresno region in 2035 of 1.5 million people and associated employment. The Fresno COG projected population growth does not exceed the Department of Finance (DOF) regional forecast and 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 in 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. Fresno 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.
- Project 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.
- Project implementation agencies will develop a construction schedule that minimizes potential neighborhood deterioration from protracted waiting periods between right-of-way acquisition and construction.

Significance After Mitigation

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

Impact 3.12.2 – Disrupt or Divide Communities

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. Fresno COG will be provided with documentation indicating compliance with all mitigation measures.

- Project 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.

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

Cumulative Impact 3.12.3

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

Mitigation Measures

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

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

Significance after Mitigation

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

3.13 PUBLIC UTILITIES, OTHER UTILITIES & SERVICES SYSTEMS

Even though they often share right-of-way or are built and maintained in easements adjacent to transportation facilities, public utilities in the region are operated and maintained by various agencies separately from the transportation system. Identified in this section are the public utilities, other utilities and services systems that come into contact with, on a regular basis, agencies responsible for transportation system construction and maintenance.

Police Protection Services

Police protection within the unincorporated areas of the County is provided by the Fresno 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 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

Pacific Gas and Electric (PG&E) operates in Fresno County.

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, 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

The regulatory setting describes the federal, state, and local agencies that have jurisdiction over public services and utilities. The regulations pertinent to public services and utilities that each of these agencies enforce are also described.

- Federal Agencies and Regulations

  40 CFR, Part 258 Subtitle D of the Resource Conservation and Recovery Act (RCRA) establishes minimum location standards for siting municipal solid waste landfills. Because California laws and regulations governing the approval of solid waste landfills meet the requirements of Subtitle D, the U.S. Environmental Protection Agency has delegated the enforcement responsibility to the State of California. California laws and regulations governing these facilities are summarized below.

- California Integrated Waste Management Act

  As many of the landfills in the state are approaching capacity and the siting of new landfills becomes increasingly difficult, the need for source reduction, recycling, and composting has become readily apparent. In response to this increasing solid waste problem, in September 1989 the state Assembly passed Assembly Bill (AB) 939, known as the California Integrated Waste Management Act. The Act requires every City and County in the state to prepare a Source Reduction and Recycling Element (SRRE) with its Solid Waste Management Plan that identifies how each jurisdiction will meet the mandatory state waste diversion goals of 25 percent by the year 1995 and 50 percent by the year 2000. Senate Bill 2202 mandates that jurisdictions continue 50 percent diversion on and after January 1, 2000. The purpose of AB 939 is to facilitate the reduction, recycling, and re-use of solid waste to the greatest extent possible. Noncompliance with the goals and timelines set forth within AB 939 can be severe, since the bill imposes fines of up to $10,000 per day on cities and counties not meeting these recycling and planning goals.

- California Integrated Waste Management Board (CIWMB)

  The CIWMB has numerous responsibilities in implementing the federal and state regulations summarized above. The CIWMB is the state agency responsible for permitting, enforcing and monitoring solid waste landfills, transfer stations, material recovery facilities (MRFs), and composting facilities within California. Permitted facilities are issued Solid Waste Facility Permits (SWFPs) by the CIWMB. The CIWMB also certifies and appoints Local Enforcement Agencies (LEAs), county or city agencies which monitor and enforce compliance with the provisions of SWFPs. The CIWMB is also responsible for monitoring implementation of AB 939 by the cities and counties. In addition to these responsibilities, CIWMB also manages the Recycled-Content.

  Materials Marketing Program to increase the understanding of and commitment to using specific recycled-content products in road applications, public works projects and landscaping. These products include recycled aggregate, tire-derived aggregate (TDA), rubberized asphalt concrete (RAC), and organic materials. As discussed above AB 939 requires that each County in the state of California prepare a Countywide Integrated Waste Management Plan (CIWMP). The CIWMP is a countywide planning document that describes the programs to be implemented in unincorporated and incorporated areas of the county that will effectively manage solid waste, and promote and implement the hierarchy of the Integrated Waste Management Act. The CIWMPs consists of a Summary Plan (SP), a Source Reduction and Recycling Element (SRRE), a Household Hazardous Waste Element (HHWE), a Non-Disposal Facility Element (NDFE), and a Countywide Siting Element (CSE).

- Summary Plan (SP)

  A Summary Plan is a solid waste planning document required by Public Resources Code Section 41751, in which counties or regional agencies provide an overview of significant waste management problems faced by the jurisdiction, along with specific steps to be taken, independently and in concert with cities within their boundaries.

- Source Reduction and Recycling Element (SRRE)

  The SRRE consists of the following components: waste characterization, source reduction, recycling, composting, solid waste facility capacity, education and public information, funding, special waste and integration. Each city and county is required to prepare, adopt, and submit to the Board an SRRE, which includes a program for management of solid waste generated within the respective local jurisdiction. The SRREs must include an implementation schedule for the proposed implementation of source reduction, recycling, and composting programs. In addition, the plan identifies the amount of landfill and transformation capacity that will be needed for solid waste which cannot be reduced, recycled, or composted.

- Household Hazardous Waste Element (HHWE)

  Each city and county is required to prepare, adopt and submit to the Board, a HHWE which identifies a program for the safe collection, recycling, treatment, and disposal of hazardous wastes that are generated by households. The HHWE specifies how household hazardous wastes generated by households within the jurisdiction must be collected, treated, and disposed. An adequate HHWE contains the following components: Evaluation of Alternatives, program selection, funding, implementation schedule and education and public information.

- Non-Disposal Facility Element (NDFE)

  Each city and county is required to prepare, adopt and submit to the Board, an NDFE which includes a description of new facilities and expansion of existing facilities, and all solid waste facility expansions (except disposal and transformation facilities) that recover for reuse at least five percent of the total volume. The NDFE are to be consistent with the implementation of a local jurisdiction's SRRE. Each jurisdiction must also describe transfer stations located within and outside of the jurisdiction, which recover less than five percent of the material received.

- Countywide Siting Element (CSE)

  Counties are required to prepare a CSE that describes areas that may be used for developing new disposal facilities. The element also provides an estimate of the total permitted disposal capacity needed for a 15-year period if counties determine that their existing disposal capacity will be exhausted within 15 years or if additional capacity is desired (PRC Sections 41700-41721.5).

- 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 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.
- Generate a substantial increase in the amount of potable water demand that exceeds the region's available infrastructure capacity to provide water service.

Impact 3.13.1

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

Numerous agencies within multiple jurisdictions in the County provide fire protection, emergency medical services, and police services. Depending upon the timing, location, and duration of construction activities, several of the proposed improvement projects, including arterials, interchanges, and auxiliary lanes could delay emergency response times or otherwise disrupt delivery of emergency services. Emergency routes would be impaired if one or more lanes of a roadway in Fresno 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 individual improvement project 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 were 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, Fresno 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 project-specific environmental review, project 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. Fresno COG will be provided with documentation indicating compliance with mitigation measures.

- Prior to construction, the project implementation agency will ensure that all necessary local and state road and railroad encroachment permits are obtained. The project 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.
  - 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 would 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 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 project-specific mitigation designed to avoid or reduce the identified significant Project impacts to a less than significant level.

Impact 3.13.2 – Increased Demand for Solid waste, Wastewater, and Potable Water

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 the 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 a 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 project-specific environmental review, project 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 project implementation agencies or local jurisdiction will be responsible for ensuring adherence to the mitigation measures. Fresno 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 sued 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 project-specific mitigation designed to avoid or reduce the identified significant Project impacts to a less than significant level.

Impact 3.13.3 – Construction Impacts

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

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

Significance After Mitigation

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

Impact 3.13.4 – Impacts on Underground Utilities

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 Fresno region. However, prior to construction, the 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 project-specific environmental review, project 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 project implementation agencies or local jurisdiction will be responsible for ensuring adherence to mitigation measures. Fresno 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 project-specific mitigation designed to avoid or reduce the identified significant Project impacts to a less than significant level.

Cumulative Impact 3.13.5

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

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

Mitigation Measures

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

Significance after Mitigation

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

3.14 SOCIAL & ECONOMIC EFFECTS

This section explores the issue of social environment in Fresno County by providing a description of the demographic and income profile. The analysis includes information on the minority and low- and moderate-income populations and the potential impact of the Project on areas with high concentrations of minority, low-income or moderate-income populations.

Environmental Setting

Environmental Justice is concerned with ensuring that adverse human health or environmental effects of governmental activities do not disproportionately fall on minority and low-income populations. For transportation, environmental justice means assessing the nature, extent, and incidence of probable impacts, both negative and positive, from any transportation-related activity. The transportation activities include the transportation planning process through implementation of individual transportation projects.

On February 11, 1994, former President Clinton signed Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*. The Executive Order directs every Federal agency to make environmental justice part of its mission by identifying and addressing the effects of all programs, policies, and activities on minority populations and low-income populations. Minority populations are currently protected from discrimination under Title VI of the Civil Rights Act of 1964. However, the new order, Executive Order 12898, specifically calls attention to the protection of minority groups and expands the focus to low-income populations.

The United States Department of Transportation (DOT) recognizes that transportation programs and policies may disproportionately burden low-income and minority communities. Hence, the U.S. DOT has issued its own order, 5680.2, to clarify and reinforce environmental justice policies for minorities and low-income populations. The Federal Highway Administration (FHWA), a branch of the DOT, has begun to carry out the order and require environmental justice analyses in its transportation programs and activities. FHWA has set policies for integrating environmental justice principles into existing operations, preventing disproportionately high and adverse effects and actions to address disproportionately high and adverse effects on low-income and minority populations. All federally funded transportation planning and decisions must involve an environmental justice assessment process that explicitly considers adverse effects or the potential of adverse effects on the populations.

FHWA wants to ensure that social, economic, and environmental impacts are addressed up front, from early on in the planning process through individual improvement project implementation. As a federally designated metropolitan transportation planning organization, Fresno COG is required to comply with rules and policies set forth by FHWA. Fresno COG's planning and programming activities have the potential to disproportionately affect human health or the environment, especially for minority and low-income populations. Metropolitan Planning Organizations (MPOs) and other related agencies will include explicit consideration of the effects of transportation activities on minority and low-income populations. This could include establishing procedures or providing meaningful opportunities for public involvement by members of minority populations and low-income populations during the planning and development of programs. Agencies should also provide public access to public information concerning the human health or environmental impacts of programs, policies, and activities. There are three main elements to FHWA's environmental justice policy:

- Avoid, minimize, or mitigate disproportionate high and adverse human health or environmental effects, including social and economic effects on minority populations, and low-income populations.
- Ensure full and fair participation by all potentially affected communities in the transportation decision-making process.

- Prevent denial of reduction in or significant delay in the receipt of benefits by minority populations and low-income groups.

Minority Populations: Minority groups, as defined by Executive Order 12898, include:

- Hispanics (persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race).
- Blacks (persons having origins in any of the black racial groups of Africa).
- Asian Americans (persons having origins in any of the original peoples of the Far East, Southeast Asia, and the Indian Subcontinent, or the Pacific Islands).
- American Indians (persons having origins in any of the original people of North America and who maintain cultural identification through tribal affiliation or community recognition).

Low-Income Populations: Low-income populations include households earning a combined income at or below the U.S. Department of Health and Human Services poverty guidelines.

Social and Economic Setting

The Population and Housing section of this EIR shows current and projected future population and employment growth in Fresno County. Between 2010 and 2035, population is expected to increase from approximately 991,922 to 1.5 billion.

Consistency of the Project with Local Economic Development Goals

As part of their general plans, local jurisdictions in Fresno County have developed economic development goals or statements. In general, local agencies encourage economic development that is consistent with the character and scale of existing development within their respective jurisdiction. The following is a synopsis of the transportation related economic development goals referenced in the Fresno County General Plan:

- Goal: To diversify the economic base of Fresno County through the expansion of non-agricultural industry clusters and through the development and expansion of recreation and visitor-serving attractions and accommodations.
    - Policies:
        - The County will support the development of a statewide high-speed rail service through the Central Valley.
        - The County will collaborate with Fresno Yosemite Airport to improve the level of air passenger service to Fresno County.
        - The County will encourage the development of visitor-serving attractions and accommodations in unincorporated areas where natural amenities and resources are attractive and would not be diminished by tourist activities.
        - The County will support the enhancement of the County's recreational bikeways and promote the bikeway network as an important component of the County's tourism program.
        - The County will coordinate with regional transportation initiatives such as the Yosemite Area Regional Transportation Strategy (YARTS) that encourage strong connections with lodging centers in the foothills and mountain areas.

Concentrations of Low-Income and Minority Groups

Low-income populations in the region are generally concentrated in the following areas (in order of highest percentage to lowest): Orange Cove, Mendota, Huron, Parlier, and San Joaquin. In these communities, thirty-four (34) to forty-four (44) percent of the population lives below the poverty level.

Concentrations of minority populations are generally concentrated in the following areas: Huron, Parlier, Mendota, San Joaquin, Orange Cove, and Firebaugh. In these communities, ninety (90) to ninety-nine (99) percent of the population is comprised of minority populations. The primary minority groups in Fresno County include Hispanic / Latino and Asian populations.

In many situations, minority and low-income populations do not have the same geographical boundaries. For example, a low-income community can be identified that is not necessarily a minority population. There are locations in the region where this does hold true.

Travel Patterns of Minority and Low-Income Populations

It is much easier to identify travel patterns of low-income populations than travel patterns of minority populations. Typically, the difficulty lies in identifying the location of a community; however, once a minority community is identified, the travel patterns of that community can be described.

Low-income populations typically make most trips by private automobile. Generally, low-income households make fewer total trips and their travel distances are much shorter per trip than non-low-income households are. It is also more common for these populations to travel by walking and biking than households whose incomes are moderate and more affluent. Where transit is concerned, low-income households tend to take the bus over the train. Higher income households that take transit generally opt in favor of the train.

It is typical that low-income populations tend to live near the urban centers and in first-ring cities (that were once considered the suburbs). In addition, they usually do not own as many automobiles. A majority of employment growth has been in the suburban areas. As such, most of the entry-level positions have been located in the growing suburban businesses. This is a large transportation issue for low-income individuals, since transportation readily serves the urban centers and is less accessible in the suburban communities.

Environmental Impacts, Mitigation Measures, and Significance After Mitigation

Major transportation projects are proposed in areas in which significant minority and low-income populations reside. It is possible that these projects could have adverse environmental impacts that could disproportionately affect people in these areas; however, it is not possible to determine specific impacts to minority and low-income populations near these facilities until project-specific environmental and engineering work is completed. For example, fewer adverse impacts may be created by transportation projects completed within existing rights-of-way than projects that will require the acquisition of additional land where homes and businesses may be located or where environmental resources could be affected. Potential adverse environmental impacts that could disproportionately affect minority or low-income populations can be better defined at the later stage of environmental review, when precise individual improvement project locations, size, and design will be defined.

Improvement projects that add new or improve existing transit service would provide greater mobility for these groups, since minority and low-income populations tend to be more reliant upon transit service than other segments of the population. This is considered a significant beneficial impact.

It is also more likely for minority and low-income households to be without an automobile than other socioeconomic groups. These households would also benefit from the provision of new or improved transit service.

Potential Environmental Effects Resulting from Social and Economic Changes

As a whole, the Project proposes economic and social changes (in the form of new forecasts in population and employment growth between 2000 and 2030) that will create physical changes to the environment. To the degree that these economic and social changes will create changes in land uses and transportation systems, and their resultant changes to the environment, these changes have been addressed in the environmental documents for local general plans. Requests for general plan amendments and rezoning are submitted to local agencies. Then, they undergo additional CEQA review at the local level to determine their consistency with existing plans (including regional plans such as the RTP) and to identify any additional resultant environmental effects.

To the degree that economic and social changes require changes to the transportation system, the potential environmental effects of these changes are evaluated in both the environmental documentation for local general plans and in the environmental documentation for the RTP. Given the programmatic nature of this EIR, the physical changes to the environment that may result from implementation of transportation projects and programs are evaluated to the degree possible. Future project-specific environmental documentation will evaluate the specific physical changes to the environment that may result from implementation of specific projects once the precise location, size, and design of these projects are known.

The general concern within the County is not so much that the Project would result in physical impacts or bisected communities. The concern is more of a question of whether or not the individual improvement project provides enough good access and services to minority or low-income communities.

Criteria for Significance

The Project will have a significant impact if the short-term construction and/or long-term operations of the proposed improvement projects will result in disproportionately high and adverse human health or environmental effects on a minority and/or low-income population.

Impact 3.14.1 – Impacts on Minority and Low-Income Populations

Construction of some improvement projects will be located in areas of minority and low-income populations.

The improvement projects may have direct, short-term impacts on surrounding communities related to construction, including noise, air quality, and traffic. However, none of these projects is expected to have a disproportionate impact on minority or low-income communities. The Project is designed to serve the entire population of the County, and the transportation projects are dispersed throughout the region.

While many of the projects are located in urban areas where a higher proportion of low-income and minority communities are, this is because more existing transportation routes and facilities are located in those areas. Since more of the existing facilities are located in those areas, more major improvements to address existing deficiencies and accommodate projected population growth are also needed in those areas.

Furthermore, Fresno COG works with cities, counties, and other implementing agencies to ensure that improvement projects serve those communities with the greatest transit needs, such as low-income or minority communities in urban core areas. The location, design, and alignment of transportation facilities and routes are planned to reduce potential impacts to the extent feasible, and to ensure that if impacts occur, these impacts do not disproportionately affect low-income or minority populations.

Numerous construction sites of individual improvement projects may experience short-term noise, air quality, and traffic impacts may occur throughout the region. Mitigation measures have been identified to minimize potential impacts and protect the sensitive uses that may be located near the individual improvement project sites, including low-income and minority communities (see sections on Noise, Air Quality, and Transportation). It is not anticipated that minority and low-income communities would be disproportionately and adversely affected. As a result, short-term impacts are considered less-than-significant.

The Population and Housing section identified potential construction impacts resulting from implementation of the Project that would remain significant and unavoidable after mitigation due to the potential displacement or relocation of homes and businesses. This section also found that some of the projects have the potential to disrupt or divide a community by separating community facilities, restricting community access and eliminating community amenities. In addition, the Land Use section identified potential impacts to sensitive receptors including residences, educational facilities, medical facilities, and places of worship that would remain significant and unavoidable after mitigation.

It is not anticipated that minority and low-income communities would be disproportionately and adversely affected, as compared to other communities. As a result, long-term impacts are considered less-than-significant.

Mitigation Measures

Impact is considered less-than-significant; no mitigation is required.

Significance After Mitigation

Not applicable.

Impact 3.14.2 – Impact on Low-Income and Minority Populations

The operation of some of the improvement projects will occur in areas of low-income and minority populations.

The improvement projects are designed specifically to improve transit accessibility, address existing deficiencies including congestion, and accommodate projected population growth to the extent feasible within the existing funding constraints. As discussed previously, the improvement projects are located throughout the region and are not disproportionately concentrated in low-income or minority areas. There are more improvements planned for urban areas. This is because more transportation facilities and services are located in those areas serving large concentrations of people. As a result, these facilities need improvements and maintenance to continue serving the rapidly growing urban populations.

The Project will improve the transportation system through a variety of projects. These improvements are intended to improve traffic flow and reduce congestion, and to address existing deficiencies associated with the projected population increases. A beneficial impact that will result from the Project is greater transit accessibility for low-income and minority residents. These improvements are particularly important for low-income and minority communities, as these groups typically rely on public transit to a much greater extent than communities with higher incomes do. Improvements will also allow more people in the region to reduce their dependence on automobiles and will provide enhanced connections to employment and housing.

It is anticipated that the improvement projects will increase accessibility and address existing problems with the transportation network. The projects are not expected to disproportionately affect low-income communities in an adverse way, since these projects are dispersed throughout the region, and are designed to improve transportation facilities where they are needed most. As a result, this impact is considered less-than-significant.

Mitigation Measures

Impact is considered less-than-significant; no mitigation is required.

Significance After Mitigation

Not applicable.

Cumulative Impact 3.14.3

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

Mitigation Measures

The mitigation measures listed above for Impacts 3.14.1 and 3.14.2 would be applied as mitigation for this impact. In addition, the following measure would apply.

- Regional planning efforts will be used to build a consensus in the region to support changes in social and economic conditions to accommodate future growth while maintaining the quality of life in the region.

Significance after Mitigation

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

3.15 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 individual improvement 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 Fresno County 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 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 SEIR. These planned projects are considered to be "financially constrained"; therefore, the likelihood for implementation over the next twenty-five (25) years is assumed. The impact analysis of each mode on the planned transportation/circulation system is provided below. The analysis was developed with the assumption that only financially constrained projects would be implemented during the life of the Project.

A number of on-going studies will affect the regionally system as it evolves over the next twenty-four (24) years. For example, the Fresno-Madera Transportation Study will identify various transportation alternatives for improved access between the Counties. The study is focused on transportation needs considering planned land use and probable growth issues.

The sprawling pattern commonly associated with California transportation networks provides fewer modal options to commuters. Multimodal efforts in Fresno County are focused on enhancing existing conditions and creating environmentally favorable patterns of travel. Based upon information provided in the 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:

- Fresno is the major population center for the Valley.
- Fresno County contains Sequoia National Park and two national forests.
- Route 41 north out of the Fresno-Clovis Metropolitan Area (FCMA) is the primary corridor to Yosemite, one of the two most visited national parks in the nation.
- As the largest producer of farm commodities in the world, Fresno 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. Each of them is key to the statewide network.
- Recreational trips are served by several state highways: Routes 33, 41, 168, 180, 99, and 5.

- Fresno 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.
- Fresno-Yosemite International provides a hub airport service to its service area of six counties.
- The climate and terrain are compatible with the use of cycling for short commutes and recreational trips.
- 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 Central Valley, 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:

- 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 (the Tower District in Fresno, Clovis' Old Town, and many of the County's small cities serve as examples built more than 40 years ago).
- 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.

<u>Highways, Streets and Roads</u>

- Regionally Significant Road System

  Fresno County's Regionally Significant Roads System is served by one Interstate, and 12 State Routes. Interstate 5 and State Route 99 are major routes that generally run in a north-south direction. State Routes 33, 41, 43, 63, 145, and 245 also provide north-south access, while Routes 168, 180, 198, and 201 generally 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.

Fresno 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 3-18 defines the functional classes in urban areas and Table 3-19 defines functional classes in rural areas.

TABLE 3-18
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

- Level of Service (LOS) Analysis

Level of Service (LOS) Standards are used by the COFCG to quantitatively assess the Regionally Significant System's performance. To determine the type and number of transportation projects that may be necessary to accommodate Fresno County's expected growth, the level of service (LOS) was assessed along the existing Regionally Significant Roads System.

According to the 2005 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 3-20 provides a definition of segment LOS.

TABLE 3-19
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.

TABLE 3-20
Segment Level of Service Definitions (2005 Highway Capacity Manual)

Level of Service	Definition
A	Represents free flow. Individual vehicles are virtually unaffected by the presence of others in the traffic stream.
B	Is in the range of stable flow, but the presence of other vehicles in the traffic stream begins to be noticeable. Freedom to select desired speeds is relatively unaffected, but there is a slight decline in the freedom to maneuver.
C	Is in the range of stable flow, but marks the beginning of the range of flow in which the operation of individual vehicles becomes significantly affected by interactions with other vehicles in the traffic stream.
D	Is a crowded segment of roadway with a large number of vehicles restricting mobility and a stable flow? Speed and freedom to maneuver are severely restricted, and the driver experiences a generally poor level of comfort and convenience.
E	Represents operating conditions at or near the level capacity. All speeds are reduced to a low, but relatively uniform value. Small increases in flow will cause breakdowns in traffic movement.
F	Is used to define forced or breakdown flow (stop-and-go gridlock). This condition exists when the amount of traffic approaches a point that exceeds the amount that can travel to a destination. Operations within the queues are characterized by stop and go waves, and they are extremely unstable.

6 Transportation Research Board, 2005

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 RTP.

Mass Transportation Existing Conditions

Existing mass transportation services in Fresno 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 Fresno County include AMTRAK, Greyhound, Orange Belt Stage Lines, and others.

In the Fresno-Clovis Metropolitan Area (FCMA), urban public transportation is provided by Fresno Area Express (FAX), considered as the major transportation service provider in the area. As a department of the City of Fresno, FAX provides two categories of public transportation service in the area: fixed-route service for the general public, and Handy Ride's demand-responsive service. Handy Ride provides service to elderly and disabled individuals who are unable to ride the fixed-route system.

In addition to these services, the City of Clovis provides public transportation services, which include Clovis Stageline, a general public fixed-route system, and Clovis Round Up, which provides demand responsive, curb-to-curb transportation service to the elderly and disabled. Both Clovis Stageline and Clovis Round Up provide transport service within Clovis City limits.

The Fresno County Rural Area is served by common carriers, the general public and social service providers. The primary provider of rural general public transportation is the Fresno County Rural Transit Agency (FCRTA), which provides fixed-route services that link communities with each other and with the Fresno-Clovis Metropolitan Area. Intra-community public transport services (fixed-route and/or demand-response) are provided through public, and private or non-profit agencies. These services address the needs of the elderly, disabled, as well as the general public.

Fresno COG designated the Fresno County Rural Transit Agency (FCRTA) and the Fresno County Economic Opportunities Commission (FCEOC) as the Rural Consolidated Transportation Service Agency (Rural CTSA). FCEOC is responsible for program administration including coordination with social service agencies, data collection, development and implementation of the Rural CTSA Operations Program and Budget, enactment of service contracts, and other administrative tasks. The Rural CTSA process involves four types of coordinated transportation services that include vehicle timesharing, ridesharing, consolidation, and maintenance. In addition to providing service to these agencies, the Rural CTSA provides FCRTA with drivers for some of its public transit sub-systems.

Aviation

Fresno County has a total of nine (9) public use airports with the Fresno Air Terminal (FAT) or Fresno Yosemite International (FYI) being the primary passenger airport facility in the region. The Fresno Air Terminal is the largest and busiest airport in the San Joaquin Valley. During 2007, 1.3 million passengers flew in and out of FYI, an increase of about 3 percent over the previous year and the largest number of passengers served since 1996. This increase is particularly noteworthy because enplanements on a national basis are down. The amount of enplaned cargo has also increased significantly. This upward trend in the amount of enplaned cargo is expected to continue over the next twenty-five years, while the number of enplaned passengers is expected to once again meet and exceed its historic highs.

Total operations at FYI are estimated to be approximately 280,000, including air carrier/commuter/charter, general aviation, and military operations but not including airfreight operations, which are separately estimated to be over

1,000 operations per year. FYI's four fixed base operators (FBOs) offer a wide range of services including fueling, aircraft maintenance, repair, storage, charter services, flight instruction, an aircraft mechanic school, advertising, surveying, air taxi, patrol, rentals and sales. FYI is designated a Primary Commercial Service Hub Airport in the California Aviation System Plan.

Details regarding the other public use airports within the County are provided in Chapter 4 of the RTP.

Non-Motorized Existing Conditions

The cities and Fresno County continue to be involved in implementing bicycle lanes. Local planning efforts also include equestrian and hiking trail systems and pedestrian facilities. Pedestrian facilities are essentially site-specific and local, and hold particular importance in community design and redesign in working toward a more livable environment. Equestrian facilities are essentially recreational in nature. Neither pedestrian nor equestrian facilities are regional in function and, following the direction of the District 6 System Management Plan, this RTP will not consider them as alternative transportation modes at the regional level. Nevertheless, this RTP recognizes the value of equestrian and hiking trail systems for recreational purposes, as enhancements to the multimodal transportation system, and for their contribution to an improved quality of life in Fresno County and, therefore, supports their continued development.

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 Fresno 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 Fresno-Clovis Metropolitan Area and in many smaller cities within the county.

Goals for the development of bicycle transportation in Fresno County are as follows:

- Planning - The recognition and integration of the bicycle as a valid transportation mode in transportation planning activities.
- Physical Facilities - Safe, convenient, and continuous routes for bicyclists of all types that interface with and complement a multimodal transportation system.
- Safety and Education - Improved bicycle safety through education and enforcement.
- Encouragement - Increased acceptance of bicycling both as a legitimate transportation mode on public roads and highways and as a transportation mode that is a viable alternative to the automobile.
- Implementation - Increased development of the regional bikeways system and related facilities by maximizing funding opportunities.

The planned bikeways regional system is shown in Chapter 4 of the RTP. The plan calls for community routes and routes that 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.

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. The largest ridership along the San Joaquin route is Fresno.

With 280 miles of rail, there are four railroad companies that own or operate rail lines in Fresno County. The Southern Pacific Company operates two mainlines and two branch lines. The Burlington Northern and Santa Fe (BNSF) Company operates one mainline and two branch lines. The San Joaquin Valley Railroad and the Tulare Valley Railroad each operate two branch lines. These rail lines are used to service industrial and agricultural areas in Fresno County.

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.
- Conflict with adopted policies, plans or programs supporting alternative transportation.

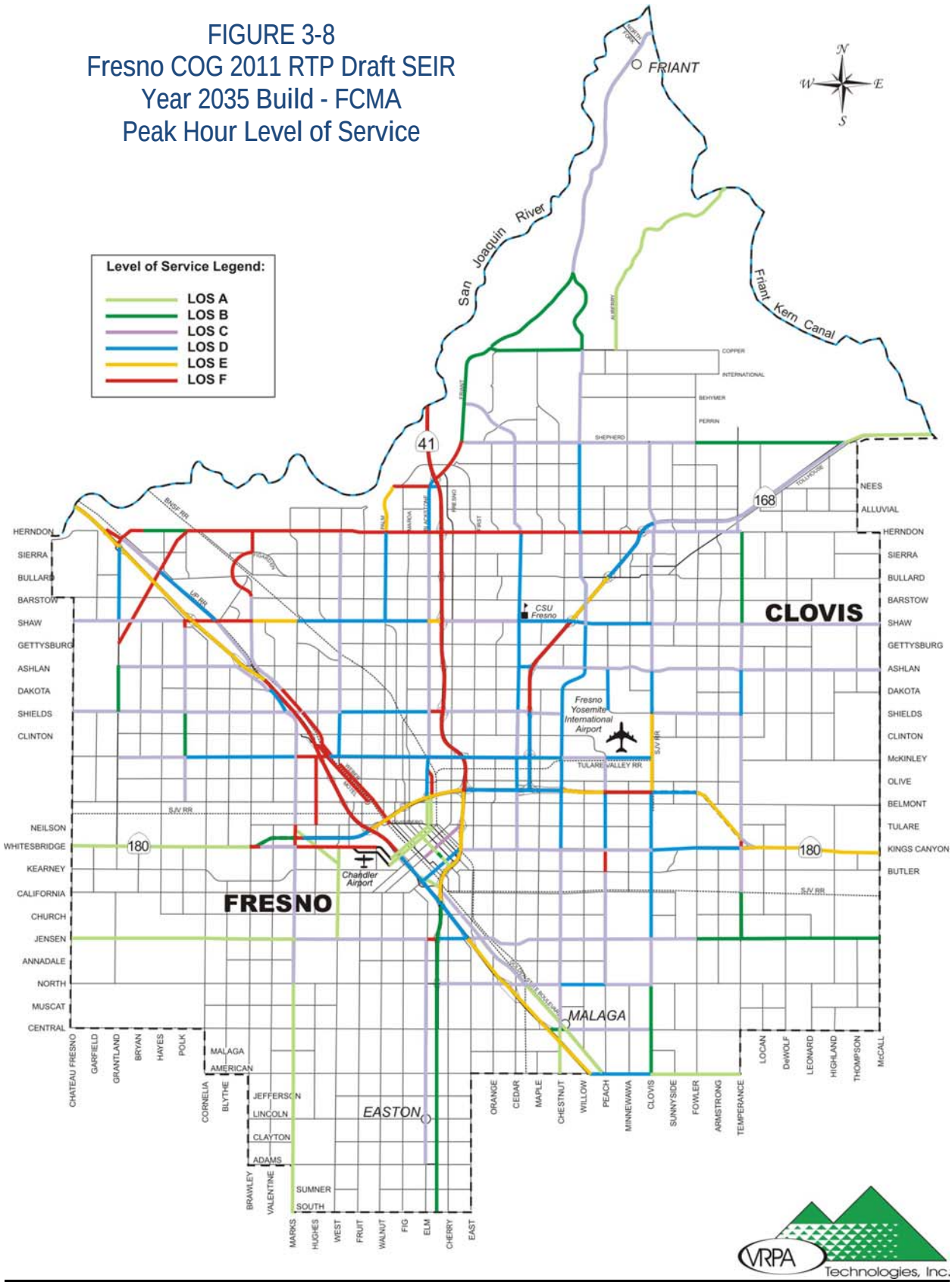
Impact 3.15.1 – Level of Service Deficiencies

To determine the Year 2035 LOS for each segment along the Regionally Significant Roads System, segment LOS was estimated using the Fresno COG Traffic Model. The Model considers the capacity of individual segments based on numerous roadway variables (freeway design speed, signalized intersections per mile, number of lanes, saturation flow, etc.).

Results of the 2035 LOS segment analysis with the Project along the RTP Regionally Significant Roads System are reflected in Figures 3-8 (FCMA) and Figure 3-9 (Fresno County). Figures 3-10 and 3-11 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. Details regarding LOS by segment are provided in the 2011 RTP. Other details related to the Project and No Build condition are provided in Tables 3-21 and 3-22. While vehicle miles traveled (VMT) is higher under the Project alternative, all other major performance measures are lower with the Project vs. the No Build condition.

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 Fresno County region will significantly improve. Capacity increasing projects that would improve these deficient levels of service are not included in the Project.

FIGURE 3-8
Fresno COG 2011 RTP Draft SEIR
Year 2035 Build - FCMA
Peak Hour Level of Service



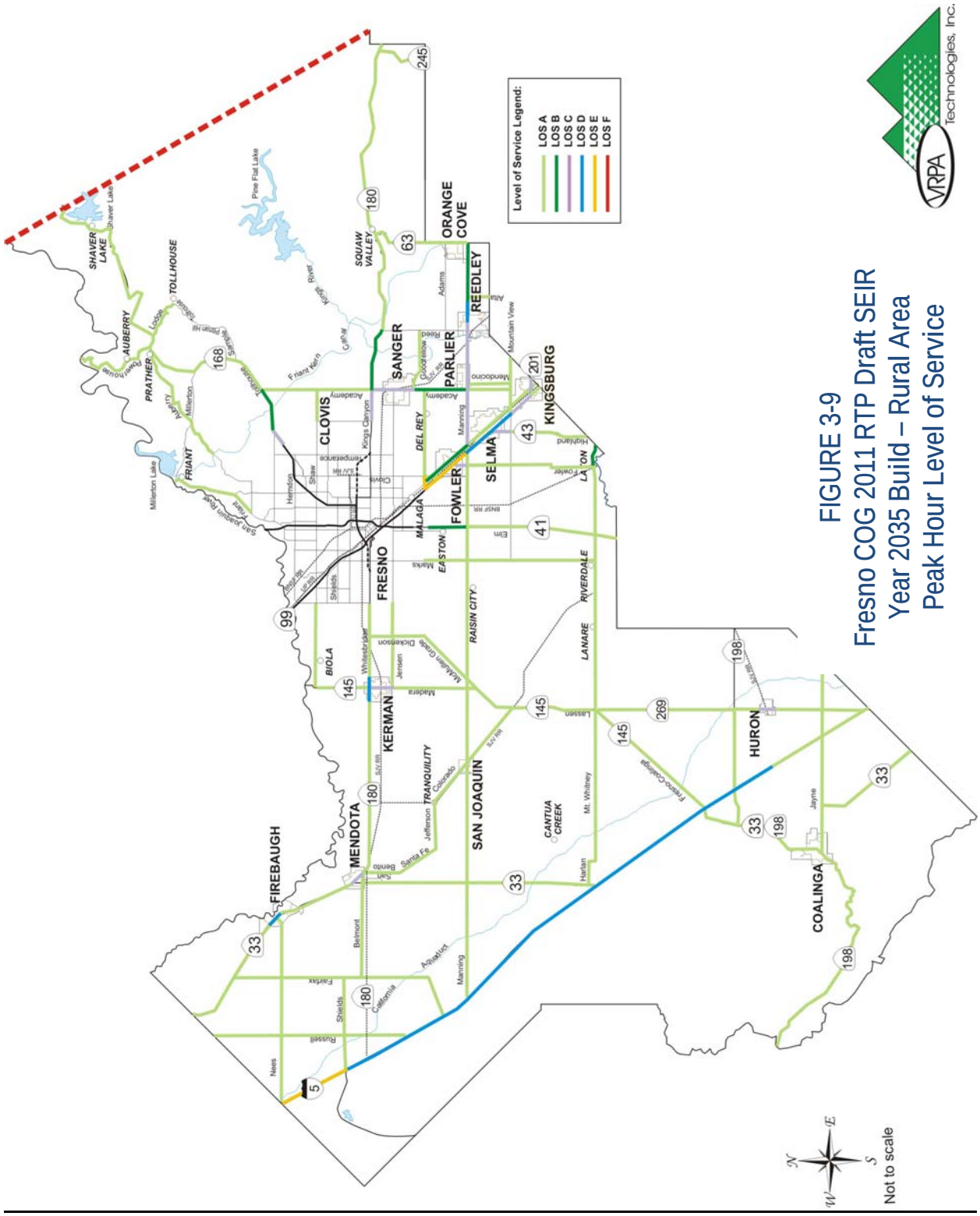
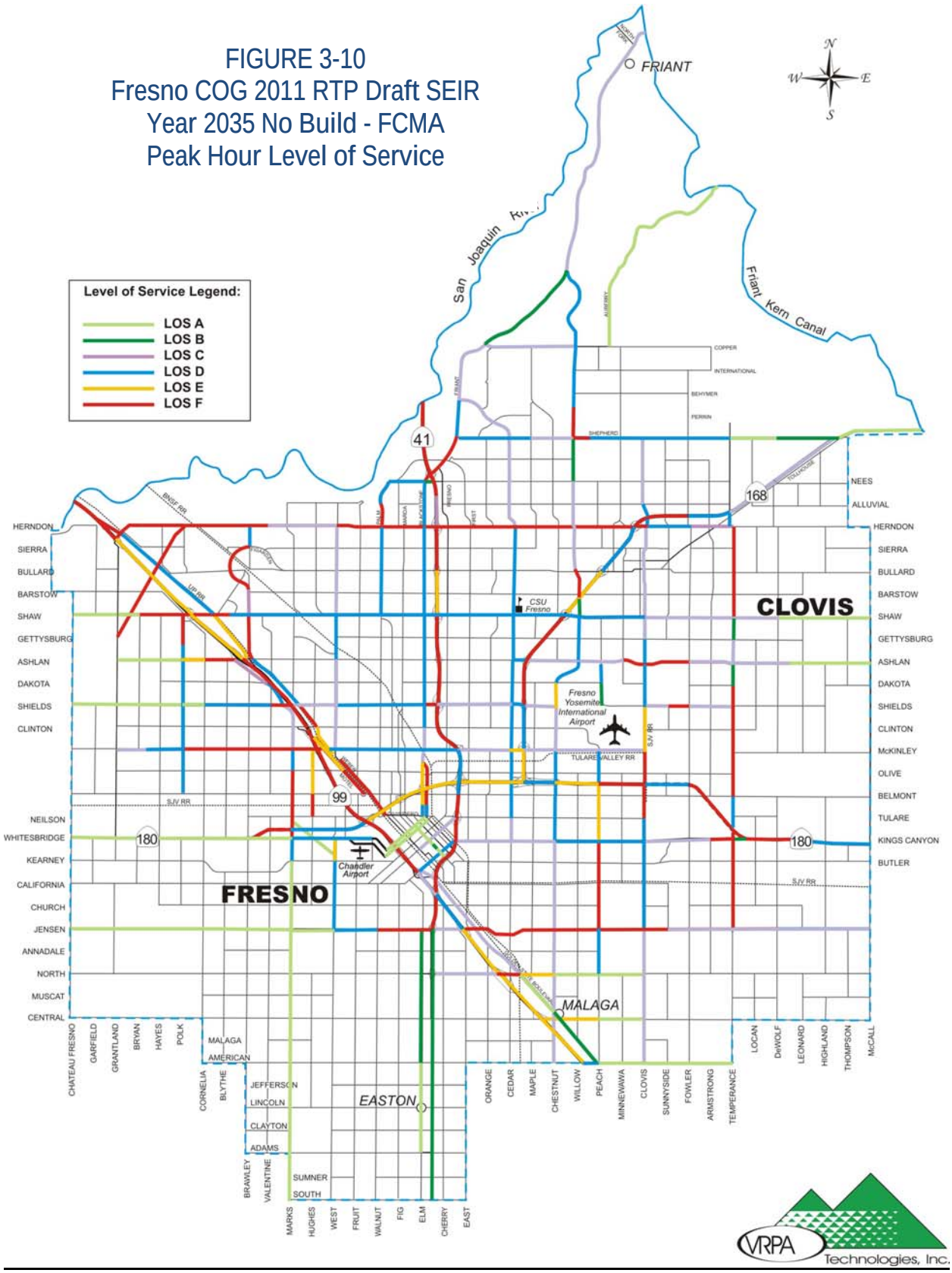


FIGURE 3-9
Fresno COG 2011 RTP Draft SEIR
Year 2035 Build – Rural Area
Peak Hour Level of Service

FIGURE 3-10
Fresno COG 2011 RTP Draft SEIR
Year 2035 No Build - FCMA
Peak Hour Level of Service



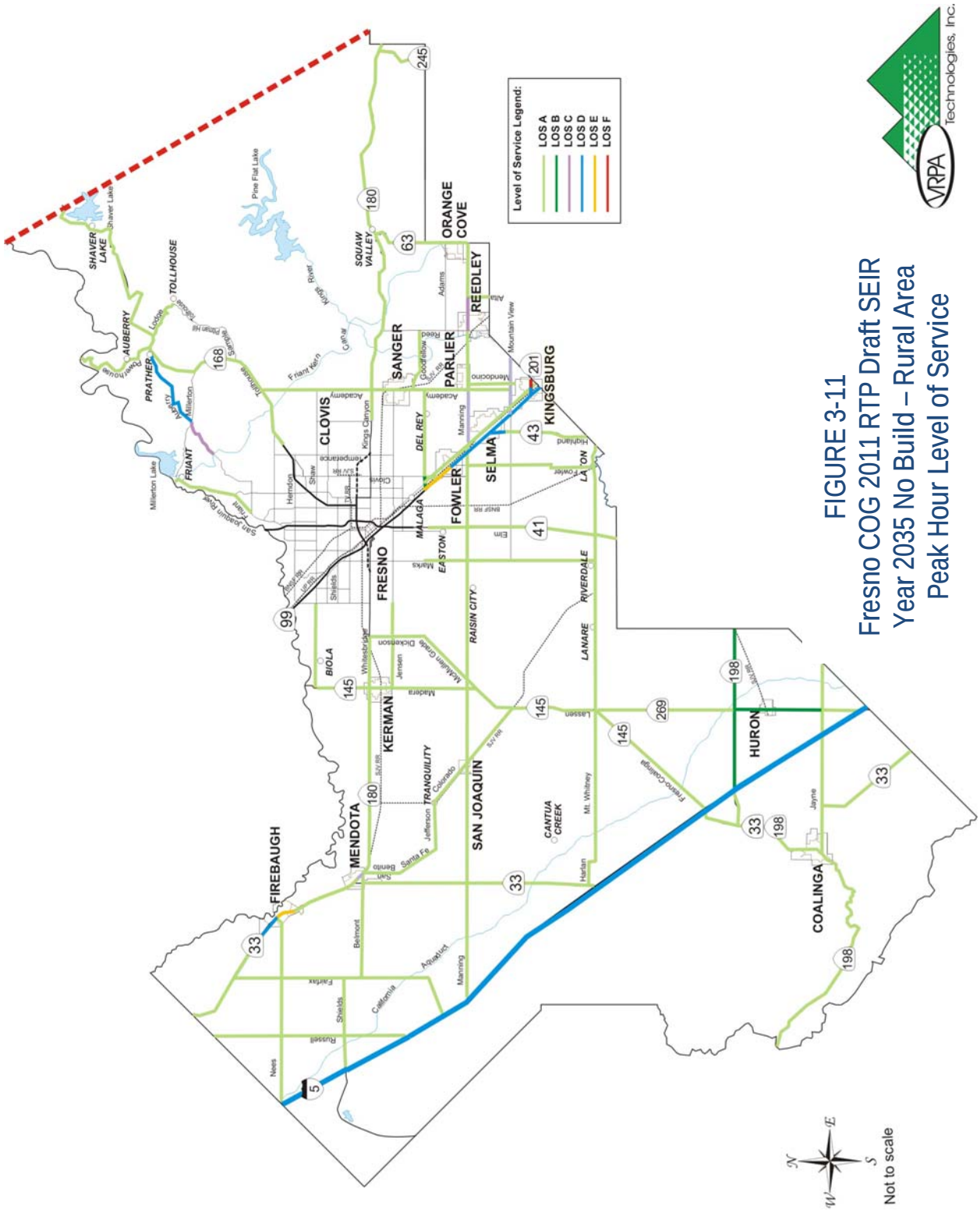


FIGURE 3-11
Fresno COG 2011 RTP Draft SEIR
Year 2035 No Build – Rural Area
Peak Hour Level of Service

TABLE 3-21
Traffic Model Summary Performance Measures
2011 RTP Project

Summary Performance Measures From Network			
37,706,976	Vehicle-Miles of Travel	Vehicles	Daily
175,160	Intrazonal Trips	Vehicles	Daily
37,882,136	**Total VMT**	Vehicles	Daily
2,547,901	Vehicle-Miles of Travel in Congestion	Vehicles	Daily
6.76	Percent VMT in Congestion	Vehicles	Daily
59,430,773	Person-Miles of Travel	Vehicles	Daily
110,514	Person-Miles of Travel	Transit	Daily
898,678	Vehicle-Hours of Travel	Vehicles	Daily
1,420,601	Person-Hours of Travel	Vehicles	Daily
7,729	Person-Hours of Travel	Transit	Daily
65,868	Vehicle-Hours of Delay	Vehicles	Daily
104,708	Person-Hours of Delay	Vehicles	Daily
262	Person-Hours of Delay	Transit	Daily
41.83	Average Speed	Vehicles	Daily
14.30	Average Speed	Transit	Daily
Summary Performance Measures from Trip Tables			
789,666	Work Auto Trips	Persons	Daily
11,179	Work Transit Trips	Persons	Daily
16,260	Work Walk/Bike Trips	Persons	Daily
817,105	Work Total Trips	Persons	Daily
6,066,454	Non-Work Auto Trips	Persons	Daily
28,804	Non-Work Transit Trips	Persons	Daily
539,429	Non-Work Walk/Bike Trips	Persons	Daily
6,634,687	Non-Work Total Trips	Persons	Daily
6,856,120	Total Auto Trips	Persons	Daily
39,983	Total Transit Trips	Persons	Daily
555,689	Total Walk/Bike Trips	Persons	Daily
7,451,792	Total Trips	Persons	Daily
96.64	% Work Auto Trips	Percent	Daily
1.37	% Work Transit Trips	Percent	Daily
1.99	% Work Walk/Bike Trips	Percent	Daily
91.44	% Non-Work Auto Trips	Percent	Daily
0.43	% Non-Work Transit Trips	Percent	Daily
8.13	% Non-Work Walk/Bike Trips	Percent	Daily
92.01	% Total Auto Trips	Percent	Daily
0.54	% Total Transit Trips	Percent	Daily
7.46	% Total Walk/Bike Trips	Percent	Daily

TABLE 3-22
Traffic Model Summary Performance Measures
2011 RTP No Build

Summary Performance Measures from Network			
37,563,231	Vehicle-Miles of Travel	Vehicles	Daily
177,575	Intrazonal Trips	Vehicles	Daily
37,740,806	**Total VMT**	Vehicles	Daily
3,591,125	Vehicle-Miles of Travel in Congestion	Vehicles	Daily
9.56	Percent VMT in Congestion	Vehicles	Daily
59,215,429	Person-Miles of Travel	Vehicles	Daily
83,909	Person-Miles of Travel	Transit	Daily
923,848	Vehicle-Hours of Travel	Vehicles	Daily
1,460,381	Person-Hours of Travel	Vehicles	Daily
5,991	Person-Hours of Travel	Transit	Daily
94,327	Vehicle-Hours of Delay	Vehicles	Daily
149,449	Person-Hours of Delay	Vehicles	Daily
271	Person-Hours of Delay	Transit	Daily
40.55	Average Speed	Vehicles	Daily
14.01	Average Speed	Transit	Daily
Summary Performance Measures from Trip Tables			
791,077	Work Auto Trips	Persons	Daily
9,434	Work Transit Trips	Persons	Daily
16,691	Work Walk/Bike Trips	Persons	Daily
817,202	Work Total Trips	Persons	Daily
6,067,327	Non-Work Auto Trips	Persons	Daily
25,328	Non-Work Transit Trips	Persons	Daily
542,136	Non-Work Walk/Bike Trips	Persons	Daily
6,634,791	Non-Work Total Trips	Persons	Daily
6,858,404	Total Auto Trips	Persons	Daily
34,762	Total Transit Trips	Persons	Daily
558,827	Total Walk/Bike Trips	Persons	Daily
7,451,993	Total Trips	Persons	Daily
96.8	% Work Auto Trips	Percent	Daily
1.15	% Work Transit Trips	Percent	Daily
2.04	% Work Walk/Bike Trips	Percent	Daily
91.45	% Non-Work Auto Trips	Percent	Daily
0.38	% Non-Work Transit Trips	Percent	Daily
8.17	% Non-Work Walk/Bike Trips	Percent	Daily
92.03	% Total Auto Trips	Percent	Daily
0.47	% Total Transit Trips	Percent	Daily
7.5	% Total Walk/Bike Trips	Percent	Daily

Referencing Tables 3-21 and 3-22, 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. While the Project will improve deficient levels of service compared to the No Build or No Project Alternatives, the Project will not address all deficient levels of service anticipated in the future.

Mitigation Measures

Implementation of street and highway improvement projects and programs generally will serve to improve traffic flows and reduce congestion and delay within Fresno County. However, street and highway needs are constrained by limited funding sources that are necessary to implement additional projects along the regional transportation system. As indicated above, LOS deficiencies are projected to occur, even considering the wide range of financially constrained street and highway improvements identified in the RTP.

To address these and other transportation/circulation related impacts, the following mitigation measures are recommended:

- A number of local street and road and State Route segments along the regional street and highway will experience deficient LOS conditions by 2030. Mitigation measures for these segments have not been identified or programmed in the RTP. Intersection improvements and lane additions would improve deficient levels of service to acceptable levels consistent with minimum LOS policies identified in the RTP; however, funding to address the improvements is not available or the costs to mitigate the deficiencies are prohibitive. Fresno COG should coordinate efforts to identify appropriate strategies that would improve deficient levels of service along the affected streets and highways. Fresno COG should work continue to with local agencies and Caltrans, District 06 to identify alternative improvements, associated cost estimates, and an implementation plan and schedule as part of the Freeway Deficiency Study and during update of local general plans and other planning efforts. Various funding sources should be analyzed as part of implementation plans and findings should be incorporated into future RTPs.
- Local agencies should be encouraged to update general, area, community and specific plans to reflect the current status of future street and highway improvements. The timing of improvements should also be regularly updated. These measures will help Fresno COG identify appropriate and available funding for planned street and highway improvements along the regional street and road system during development of future RTPs.

Significance After Mitigation

While improved mobility will result from implementation of the projects contained in the RTP, some significant unavoidable impacts, considering the regional minimum LOS policy of “D” will occur. LOS deficiencies will result along a number of regional street and highway segments and associated intersections because of the inability to widen such facilities due to funding and other constraints even with RTP projects. It is anticipated that even with implementation of the Project significant LOS deficiencies will continue therefore; this impact would be considered significant and unavoidable.

Results of the LOS deficiencies along the regionally significant system under the No Project Alternative are provided in Chapter 4 and Appendix _ of the 2011 RTP.

The resultant 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 Fresno 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 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 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 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 3.14.2

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

The overarching goal for the Project is to develop a fully integrated, multi-modal transportation system to serve as a catalyst to enhance the quality of life enjoyed by the current and future residents of Fresno 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.

4.0 COMPARISON OF PROJECT ALTERNATIVES

4.1 INTRODUCTION

State CEQA Guidelines require that an EIR identify a range of reasonable Project alternatives, or alternative Project locations, which could feasibly meet the basic objectives of the Project, as well as evaluate the merits of the alternatives. The Guidelines also require that the No Project alternative and its impacts are evaluated, and that discussion should focus on alternatives that are capable of eliminating significant adverse environmental effects of the Project or reducing them to less-than-significant levels. The alternative impact analysis is presented below at a summary level of detail, relying upon the base information presented in Section 3. This section only provides a comparison for the purpose of selecting the environmentally superior alternative. If an alternative is clearly superior to the proposed project, it is to be designated as the superior alternative. If the alternative with the least environmental impact is the No Project alternative, then one of the other alternatives is to be identified as the environmentally superior alternative.

4.2 OVERVIEW

The impact analyses presented in Section 3 of this SEIR focuses on an analysis of the Project. Three (3) additional alternatives have been developed in this section of the SEIR to ensure that a reasonable range of alternatives to the Project is provided. For purposes of this analysis, Project alternatives include the “No Build”, “No Project”, and the “Vehicle Miles Traveled (VMT) Reduction” Alternatives.

No Build Alternative

This Alternative has been analyzed to determine whether environmental impacts associated with the Project will be lessened if planned improvements to the future transportation system were not made; that is, if improvements are not implemented beyond existing projects and those projects that are currently programmed in the Transportation Improvement Program (TIP). This Project Alternative would, however, consider projected (Year 2035) growth and development.

The No Build Alternative reflects all existing transportation systems, projects contained in the TIPs, projects contained in local agency Capital Improvement Programs (CIPs), and all projects that are considered "exempt" under the Air Quality Conformity Regulations.

Possible significant impacts could result from this alternative. In particular, impacts upon air quality, noise, land use, and the transportation or circulation systems would occur. These impacts are discussed below.

Impact 4.2.1

- Air Quality

  Transportation improvement projects, if not implemented, will result in significant environmental impacts. In particular, air quality will be significantly impacted. Overall, air quality in future years will be worse without implementation of planned improvement projects scheduled for implementation. A detailed assessment of such impacts is provided in the latest Air Quality Conformity Finding.

Even with significant trip reduction, air quality impacts associated with this project alternative cannot be mitigated. As a result, this project alternative is not considered viable.

- Noise

Noise impacts are also considered significant. As vehicular travel increases and congestion levels worsen, noise impacts are enhanced. Without implementation of planned transportation improvements, noise levels will increase significantly beyond what can be economically mitigated.

- Land Use

Land use impacts associated with this alternative could be significant. In order for this alternative to be viable, and not significantly impact existing and planned land use, major trip reduction strategies would be required beyond what may be feasible. Further, major changes in land use planning would be required in order to support enhanced trip reduction.

- Transportation/Circulation

Numerous segments along the Regionally Significant System would experience major (LOS) deficiencies resulting from implementation of the No Build Project Alternative. These impacts are considered significant given the amount of average daily traffic that is projected by 2035. Significant delay and congestion well beyond the traffic capacity of these segments would be realized resulting in significant environmental and economic impacts. State highway segments projected to fall to LOS “E” or "F" and local agency segments projected to fall to LOS “E” or “F” under this projected alternative are identified in Figures 3-10 and 3-11.

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 Fresno County and the associated Air Basin to meet air quality standards and improve levels of congestion and delay.

No Project Alternative

California Environmental Quality Act (CEQA), federal SAFETEA-LU, and federal Air Quality Conformity regulations require assessment of a No Project Alternative. This alternative has been analyzed to determine whether environmental impacts associated with the Project will be lessened if planned improvements to the future transportation system as identified in the 2007 RTP were made. This Project Alternative would, however, consider projected (Year 2035) growth and development.

The No Project Alternative reflects all existing transportation systems, projects contained in the TIPs, projects contained in local agency Capital Improvement Programs (CIPs), and all projects that are considered "exempt" under the Air Quality Conformity Regulations.

Significant impacts could result from this alternative; specifically, impacts upon air quality, noise, land use, and transportation or circulation systems could occur. These impacts are discussed below.

Impact 4.2.2

- Air Quality

  Transportation improvement projects identified in the 2011 RTP, if not implemented, will result in significant environmental impacts. In particular, air quality will be significantly impacted but not to the extent under the No Build Project Alternative. Overall, air quality in future years will be worse without implementation of the planned improvement projects contained in the 2011 RTP. This alternative would limit the amount of funding to other forms of transportation or to the limits identified in the 2011 RTP. As a result, this project alternative is not considered viable.

- Noise

  Noise impacts are also considered significant. Under the No Project Alternative, vehicular travel will increase and congestion level will worsen, and noise impacts will be enhanced when compared to the Preferred Project Alternative. Without implementation of planned transportation improvements identified in the 2011 RTP, noise levels will increase significantly beyond what can be economically mitigated.

- Land Use

  Land use impacts associated with this alternative could be significant. In order for this alternative to be viable, and not significantly impact existing and planned land use, trip reduction strategies would be required. Further, major changes in land use planning would be required in order to support enhanced trip reduction.

- Transportation/Circulation

  Additional segments along the Regionally Significant System would experience major (LOS) deficiencies resulting from implementation of the No Project Alternative. These impacts are considered significant given the amount of average daily traffic that is projected by 2035. Significant delay and congestion well beyond the traffic capacity of these segments would be realized resulting in significant environmental and economic impacts beyond those identified in the Preferred Project Alternative. State highway segments projected to fall to LOS “E” or "F" and local agency segments projected to fall to LOS “E” or “F” under this projected alternative are identified in the 2007 RTP.

  In addition to street and highway impacts, major impacts upon other modes of transportation would also be realized. Without implementation of additional mass transportation, aviation, non-motorized, and goods movement improvements that would be facilitated by funding identified in the 2011 RTP, the transportation/circulation system will continue to rely on automobiles with transit primarily available for the transit dependant. These impacts would further reduce the ability of agencies in Fresno County and the associated Air Basin to meet air quality standards and improve levels of congestion and delay.

VMT Reduction Project Alternative

This Project Alternative would focus on reducing VMT and vehicle trips (VT) through enhanced improvements in transportation control measures (TCMs) including rail, transit, and others, beyond that considered by the Project. Specifically, this alternative involves additional "mode shift" activities that focus on lessening the use of the single-occupant vehicle (SOV) to "enhanced" alternative forms of transportation. Therefore, this alternative would require either a shift in transportation funds from streets and highways to further enhance the implementation and/or development of alternative transportation modes and TCMs necessary to achieve VMT and VT targets/budgets. How much VMT and VT to reduce has been determined during the Conformity Analysis and considering VMT and VT

targets/budgets for specific years provided by the California Air Resources Board (CARB) and San Joaquin Valley Air Pollution Control District (SJVAPCD).

Impact 4.2.3

- Air Quality

  In addition to this Alternative's considerable emphasis on trip reduction strategies and alternative forms of transportation to reduce VMT and VT, mechanisms must be in place to ensure that the targets/budgets are achieved. This goal may only be possible if changes in land use planning practices are made by local jurisdictions. Such changes may include the provision for increased densities along major transportation corridors; provisions for "mixed-use" developments that would result in a "jobs to housing balance"; and the appropriate phasing of different types of development projects to ensure that a "jobs to housing balance" can be achieved.

  To assist local agencies in addressing air quality concerns during the planning process, the SJVAPCD has prepared the Air Quality Guidelines for General Plans. The SJVAPCD Governing Board adopted the Guidelines on August 20, 1998. The Guidelines provide a resource to local agencies that they can use to implement local air quality programs. The Guidelines also contain a number of goals, objectives, and policies designed to lessen air quality impacts from mobile, area, stationary, and indirect sources.

  Based on results of the Air Quality Assessment, documented in Section 3, major adjustments to the planned multi-modal transportation system will not be necessary. Further, because the projects contained in the 2011 RTP must be financially constrained, enhancing the provision of alternative modes of transportation, beyond those improvements included in those documents, will not be possible.

  Air quality is also expected to worsen if planned streets and highway projects are not implemented beyond the STIP period, even considering a major shift to enhanced alternative modes of transportation. Referencing Section 3, the planned street and highway projects are benefiting air quality over time because the projects are expected to significantly reduce delay and congestion. A major shift to alternative forms of transportation, beyond that included in the preferred Project alternative, would not be expected to capture all the trips that would be affected. The result would be significant delay and congestion and therefore significant air quality impacts.

- Noise

  Noise impacts are considered significant under this Alternative. With additional emphasis placed on mass transit, congestion levels along the major streets and roads within the region will increase resulting in increased noise levels. Streets and highways would not be widened due to lack of funding. Further, under this alternative, funding would be provided for a higher level of mass transit projects. The noise impacts related to additional increases in funding to mass transportation projects will be significant.

- Land Use

  This alternative could also have three types of land use impacts: changes in land use patterns, loss of existing or future land uses to expanded rights-of-way, and impacts associated with compatibility of transit and rail improvements to adjacent land uses.

- Transportation/Circulation

While it could be argued that project funding for street and highway improvements under SAFETEA-LU could be applied to enhance alternative forms of transportation instead, the amount of funding would not be sufficient enough to significantly reduce trips along the regionally significant streets and highways to a level that would "off-set" major level of service (LOS) deficiencies. In other words, if a further shift in funding from streets and highways to other modes of transportation was accommodated, it is expected that LOS deficiencies would increase, not decrease. This assumption is based upon studies and findings made by other regional agencies with the ability to provide for mode-split analysis.

In 2006, Fresno County Voters approved a half-cent sales tax called Measure C. Measure C included a projected $5 million reserve for the completion of the PTIS and the formation of a regional transit agency. The PTIS is to evaluate mobility needs and opportunities, and to identify strategies for public transit and transit supportive infrastructure development that will result in wider acceptance and use of non-automobile transportation modes such as public transit, bicycle and pedestrian travel. In addition to the development of viable alternative public transportation options for Fresno County, this study seeks to develop ridership projections and cost estimates for various growth and development scenarios that will be used to establish a long-range plan leading to optimum connectivity within the region.

The Public Transportation Infrastructure Study (PTIS) is exploring how people travel in Fresno County, so that by 2050 there will be more opportunities to travel by bus, by bike or by foot.

The PTIS will help Fresno County identify ways to:

- Reduce urban sprawl.
- Decrease traffic congestion.
- Reduce greenhouse gas emissions.
- Improve air quality.
- Preserve agricultural land.

Results of the PTIS will identify future opportunities for enhanced transit systems in Fresno County including Bus Rapid Transit (BRT) and light rail. The study is scheduled for completion in 2011.

4.3 ENVIRONMENTALLY PREFERRED ALTERNATIVE

Based on the analysis and results described in Section 3, the preferred alternative is the implementation of the 2011 RTP. This alternative was analyzed considering historical growth rates in VMT and VT, as well as anticipated growth in the use of other forms of transportation such as transit, rail, aviation, and non-motorized. Identification of TCMs, necessary to achieve positive air quality conformity findings, has also been evaluated as part of this alternative.

Improvement projects evaluated and identified under this alternative are "financially constrained" in accordance with the SAFETEA-LU and Air Quality Conformity requirements. This alternative focuses on "traditional" land use planning activities, i.e., designation of planned growth and development consistent with established land use density policies identified in the County General Plan and in local city General Plans.

The Project is considered the "Environmentally Preferred Alternative" because it is feasible, will reduce air pollution, and will provide for improvements consistent with the 2011 RTP Policy and Financial Elements. These improvements are generally located along existing transportation corridors and/or existing rights-of-way. Therefore, impacts are expected to be less significant compared to other project alternatives that will require increased funding and potentially create new transportation corridors in developed and undeveloped areas.

5.0 LONG-TERM EFFECTS

Section 15126.2 of the *CEQA Guidelines* requires that EIRs identify four types of impacts:

- The significant environmental effects of the project
- Significant effects of the project which cannot be avoided if the project is implemented
- Significant irreversible environmental changes which would be caused by the project
- 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 SEIR. This section of the SEIR 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 improvement projects under the Preferred Project Alternative where construction of such projects would utilize 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, where feasible, for all of the significant impacts of the proposed Project, the Plans would result in the following impacts that are significant and unavoidable even after implementation of available, feasible mitigation measures:

- Blocked or impeded scenic resources as seen from the transportation facility or from the surrounding area.
- Altered appearance of scenic resources along or near designated or eligible scenic highways and/or vista points.
- Creation of significant contrasts with the overall visual character of the existing landscape setting
- New source of substantial light and glare.
- Land use and growth may occur in areas not previously envisioned for growth and development (agricultural areas).
- Increased emissions during the planning period for the Project.
- Degradation or removal of natural vegetation and wildlife habitat during construction activities.
- Displacement or removal of riparian or wetland habitat during construction and operation of improvement projects.
- Displacement or removal of riparian or wetland habitat during construction and operation of improvement projects as a result of edge effects.
- Temporary or permanent impacts to terrestrial and aquatic wildlife movements.
- Potentially increase siltation of screens and other water resources from exposures of erodible soils during construction activities.
- Indirect cumulative effect on biological resources.
- Cumulative Greenhouse Gas Emissions (GHG) impact.
- Impacts on cultural and historical sources resulting from increased construction activities.
- Excavation and earthmoving activities may encounter previously unknown archaeological resources or paleontological materials.
- Cumulative regional impacts on existing cultural and historical resources.
- Increased slope failure.
- Long-term erosion impacts.

- Impact along alignments of state owned and state mineral-reserve land.
- Cumulative regional impacts on geologic resources.
- Create a hazard to the public or environment thru the release of hazardous materials during transportation
- Cumulative regional impact on water quality, stormwater infiltration, groundwater recharge, flood hazard, wastewater treatment service, and water demand.
- Impacts on land use patterns, potentially causing land use growth and development to occur in areas not previously envisioned for growth and development.
- Sensitive receptors located in the urban and rural areas of the Fresno region including residences, educational facilities, medical facilities and places of worship. Construction and implementation of the proposed highway and arterial improvements and transit facilities would impact sensitive receptors located in the vicinities of the individual improvement projects.
- Loss of open space areas.
- Disturbance or loss of significant agricultural resources throughout the Fresno region.
- Cumulative regional impacts on existing and planned land use.
- Noise impacts resulting from construction and grading activities.
- Exposure to noise for noise-sensitive land uses in excess of normally acceptable noise levels or substantial increases in noise.
- Cumulative regional impacts on ambient noise levels.
- Displaced or relocated residences and businesses through acquisition of land and buildings necessary for roadway improvement.
- Disrupted or divided communities by separating community facilities, restricting community access and eliminating community amenities.
- Cumulative regional impact to population, housing and employment.
- Cumulative regional impact on public utilities, other utilities and services systems.
- Level of Service (LOS) deficiencies (LOS E and F conditions) and congestion along the regionally significant road system.

5.2 SIGNIFICANT IRREVERSIBLE IMPACTS

The identification of irreversible impacts is required in Section 15126.2(c) of the CEQA Guidelines. This section states:

> *Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts, and particularly secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. In addition, irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that current consumption is justified.*

CEQA Section 15126.2(c) requires a discussion of any significant impacts that cannot be reduced to levels of insignificance. Although mitigation measures have been identified, where feasible, for all of the significant impacts of the proposed Project, the Plans would result in the following impacts that are significant and irreversible even after implementation of available, feasible mitigation measures:

- Blocked or impeded scenic resources as seen from the transportation facility or from the surrounding area.
- Altered appearance of scenic resources along or near designated or eligible scenic highways and/or vista points.
- Creation of significant contrasts with the overall visual character of the existing landscape setting

- New source of substantial light and glare.
- Land use and growth may occur in areas not previously envisioned for growth and development (agricultural areas).
- Increased emissions during the planning period for the Project.
- Degradation or removal of natural vegetation and wildlife habitat during construction activities.
- Displacement or removal of riparian or wetland habitat during construction and operation of improvement projects.
- Displacement or removal of riparian or wetland habitat during construction and operation of improvement projects as a result of edge effects.
- Temporary or permanent impacts to terrestrial and aquatic wildlife movements.
- Potentially increase siltation of screens and other water resources from exposures of erodible soils during construction activities.
- Indirect cumulative effect on biological resources.
- Cumulative Greenhouse Gas Emissions (GHG) impact.
- Impacts on cultural and historical sources resulting from increased construction activities.
- Excavation and earthmoving activities may encounter previously unknown archaeological resources or paleontological materials.
- Cumulative regional impacts on existing cultural and historical resources.
- Increased slope failure.
- Long-term erosion impacts.
- Impact along alignments of state owned and state mineral-reserve land.
- Cumulative regional impacts on geologic resources.
- Create a hazard to the public or environment thru the release of hazardous materials during transportation
- Cumulative regional impact on water quality, stormwater infiltration, groundwater recharge, flood hazard, wastewater treatment service, and water demand.
- Impacts on land use patterns, potentially causing land use growth and development to occur in areas not previously envisioned for growth and development.
- Sensitive receptors located in the urban and rural areas of the Fresno region including residences, educational facilities, medical facilities and places of worship. Construction and implementation of the proposed highway and arterial improvements and transit facilities would impact sensitive receptors located in the vicinities of the individual improvement projects.
- Loss of open space areas.
- Disturbance or loss of significant agricultural resources throughout the Fresno region.
- Cumulative regional impacts on existing and planned land use.
- Noise impacts resulting from construction and grading activities.
- Exposure to noise for noise-sensitive land uses in excess of normally acceptable noise levels or substantial increases in noise.
- Cumulative regional impacts on ambient noise levels.
- Displaced or relocated residences and businesses through acquisition of land and buildings necessary for roadway improvement.
- Disrupted or divided communities by separating community facilities, restricting community access and eliminating community amenities.
- Cumulative regional impact to population, housing and employment.
- Cumulative regional impact on public utilities, other utilities and services systems.
- 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 State CEQA Guidelines, an EIR is required to evaluate potential growth-inducing impacts of a proposed project. CEQA Guidelines defines a growth-inducing impact 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, which exceeds planned growth of an area and results in new development, which 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. The environmental effects of induced growth are indirect impacts of the proposed project. Such effects could result in significant, adverse environmental impacts, which 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.

The socioeconomic growth that the Fresno region has experienced for the past 50 years is expected to continue. The Project will, in and of itself, not incur any growth inducing impacts to the Fresno region. It is anticipated that the Fresno COG region will grow at the same rate, regardless of whether or not the Project is implemented. Specifically, population in Fresno County is expected to increase by approximately 56% regardless of the Project. The region's population will grow from an estimated 942,298 people in 2009 to approximately 1.5 million by the Year 2035. See the Population, Employment, and Housing section (Section 3) for further clarification. Construction of individual improvement 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, according to CEQA Guidelines 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 (Section 15255). According to CEQA Guidelines Sections 15130(a) and (b), 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. The CEQA Guidelines require that EIRs discuss the 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 would be expected to contribute to cumulative impacts on the same scale as the Project. 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 for growth and development (agricultural areas).
- Increased emissions during the planning period for the Project.

- Degradation or removal of natural vegetation and wildlife habitat during construction activities.
- Displacement or removal of riparian or wetland habitat during construction and operation of improvement projects.
- Displacement or removal of riparian or wetland habitat during construction and operation of improvement projects as a result of edge effects.
- Temporary or permanent impacts to terrestrial and aquatic wildlife movements.
- Potentially increase siltation of screens and other water resources from exposures of erodible soils during construction activities.
- Indirect cumulative effect on biological resources.
- Cumulative Greenhouse Gas Emissions (GHG) impact.
- Impacts on cultural and historical sources resulting from increased construction activities.
- Excavation and earthmoving activities may encounter previously unknown archaeological resources or paleontological materials.
- Cumulative regional impacts on existing cultural and historical resources.
- Increased slope failure.
- Long-term erosion impacts.
- Impact along alignments of state owned and state mineral-reserve land.
- Cumulative regional impacts on geologic resources.
- Create a hazard to the public or environment thru the release of hazardous materials during transportation
- Cumulative regional impact on water quality, stormwater infiltration, groundwater recharge, flood hazard, wastewater treatment service, and water demand.
- Impacts on land use patterns, potentially causing land use growth and development to occur in areas not previously envisioned for growth and development.
- Sensitive receptors located in the urban and rural areas of the Fresno region including residences, educational facilities, medical facilities and places of worship. Construction and implementation of the proposed highway and arterial improvements and transit facilities would impact sensitive receptors located in the vicinities of the individual improvement projects.
- Loss of open space areas.
- Disturbance or loss of significant agricultural resources throughout the Fresno region.
- Cumulative regional impacts on existing and planned land use.
- Noise impacts resulting from construction and grading activities.
- Exposure to noise for noise-sensitive land uses in excess of normally acceptable noise levels or substantial increases in noise.
- Cumulative regional impacts on ambient noise levels.
- Displaced or relocated residences and businesses through acquisition of land and buildings necessary for roadway improvement.
- Disrupted or divided communities by separating community facilities, restricting community access and eliminating community amenities.
- Cumulative regional impact to population, housing and employment.
- Cumulative regional impact on public utilities, other utilities and services systems.
- 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:

COUNCIL OF FRESNO COUNTY GOVERNMENTS

Tony Boren, Executive Director
Barbara Steck, Deputy Director
Michael Bitner, Principal Planner
Les Beshears, Finance Director
Clark Thompson, Planner III, Project Manager
Lauren Dawson, Planner III
Renee DeVere-Oki, Planner III
Melissa Garza, Planner I – Rideshare Coordinator
Lindsey Monge, Planner I
Marla Day, Secretary

VRPA TECHNOLOGIES, INC.

Georgiena Vivian, Vice President, Project Manager
Erik Ruehr, P.E., Director of Traffic Engineering
LaVerne Bitner, CPS Administrative Assistant
Jeff Stine, Director of Operations
Jason Ellard, Transportation Engineer
Erica Thompson, Transportation Engineer
Dena Graham, Research Specialist

6.2 ORGANIZATIONS AND AGENCIES REFERENCED OR CONSULTED

The following provides a list of organizations and agencies referenced or consulted during preparation of this SEIR:

AMTRAK
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 Fresno (Various Departments)
Clovis Transit
Council of Fresno County Governments (Fresno COG)
County of Fresno (Various Departments)
Federal Emergency Management Agency
Federal Highway Administration
Federal Transit Administration
Fresno Area Express
Fresno County Airport Land Use Commission
Fresno County LAFCO
Fresno County Rural Transit Agency
Fresno County Transportation Authority
Governor's Office of Planning and Research
Greyhound Bus Lines
Institute of Transportation Engineers
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
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

Council of Fresno County Governments

2035 Tulare Street, Suite 201
Fresno, California 93721

Telephone: (559) 233-4148 • Fax: (559) 233-9645
Website Address: www.fresnocog.org

Notice of Preparation

Date: September 8, 2009

To: Reference List of Recipients

From: Council of Fresno County Governments
2035 Tulare Street, Suite 201
Fresno, CA 93721

Subject: Notice of Preparation of an Subsequent Environmental Impact Report (SEIR) for the Proposed 2011 Revision of the Regional Transportation Plan (RTP)

The Council of Fresno County Governments (Fresno COG) will be the Lead Agency and will prepare a Subsequent Environmental Impact Report (SEIR) for the project defined below. Fresno COG is requesting input regarding the scope and content of the environmental information, which is germane to your agency's statutory responsibilities in connection with the proposed project. Your agency will need to use the SEIR prepared by Fresno COG when considering your permit or other approvals for the projects to be included in the 2011 RTP.

The project description, locale and probable environmental issues to be addressed in the SEIR are described below. An Initial Study is not attached and is not required.

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 Clark Thompson, Planner III at the address shown above. Please identify the name and phone number of a contact person at your agency.

Project Title

Subsequent Environmental Impact Report (SEIR) for the 2011 Revision of the Regional Transportation Plan (RTP).

Location

Corporate limits of Fresno County, California including the fifteen incorporated cities and all unincorporated areas (reference the attached map of Fresno County identifying the area to be addressed by the SEIR and the RTP).

Member Agencies: *The cities of Clovis, Coalinga, Firebaugh, Fowler, Fresno, Huron, Kerman, Kingsburg, Mendota, Orange Cove, Parlier, Reedley, San Joaquin, Sanger, Selma & Fresno County*

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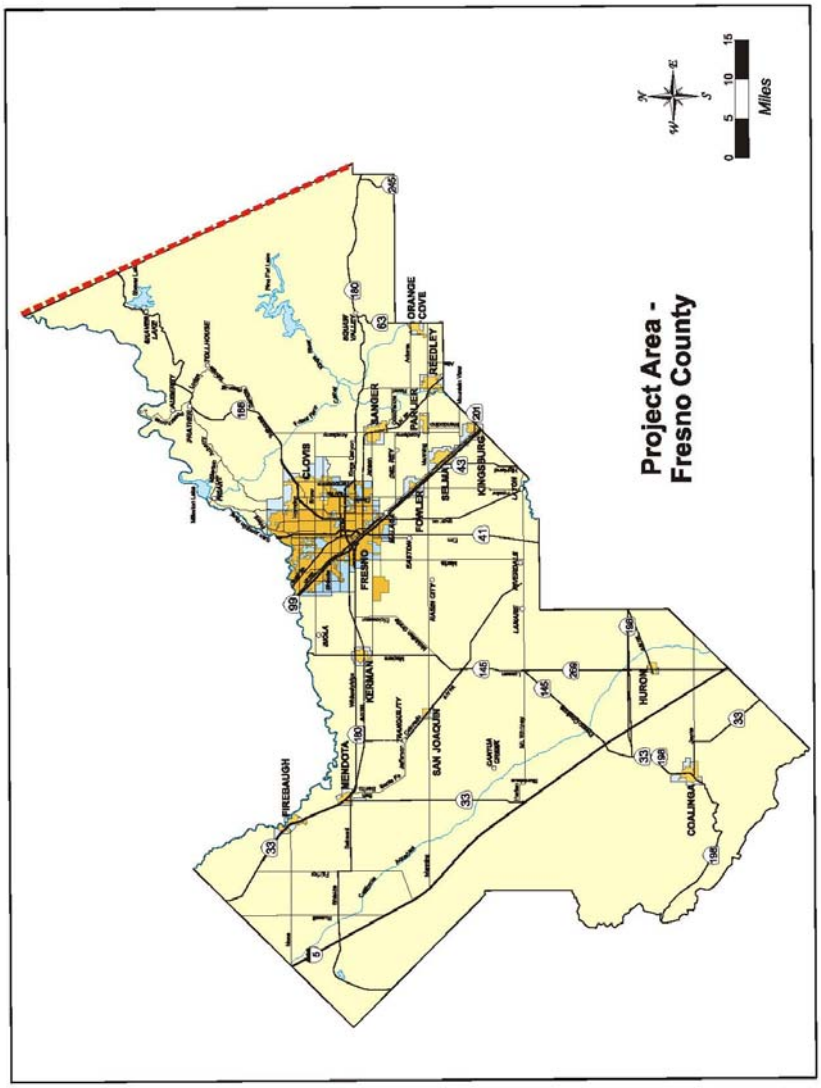
Project Area -
Fresno County
Miles
0
5
10
15
FIREBAUGH
MENDOTA
KERMAN
FRESNO
CLOVIS
SANGER
REEDLEY
ORANGE COVE
PARLIER
SELMA
KINGSBURG
FOWLER
SAN JOAQUIN
HURON
COALINGA

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Project Description

Background: Fresno COG is the Regional Transportation Planning Agency and Metropolitan Planning Organization for the Fresno County region. As such, Fresno COG must identify transportation needs in Fresno County to prepare the Regional Transportation Plan and subsequent updates of the plan. In addition, Fresno COG is also responsible for preparing a Program EIR that reflects the general environmental effects of programs and projects to be included in the RTP.

Project Overview: The project, as defined by CEQA Statutes, Section 21065, is the preparation of the 2011 revision of the RTP. Fresno 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, and Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). The RTP must also meet Transportation Conformity for the Air Quality Attainment Plan per 40 CFR Part 51 and 40 CFR Part 93. In addition, the RTP must address requirements set forth in Assembly Bill 32, the California Global Warming Solutions Act of 2006. Finally, the California Transportation Commission has prepared guidelines (most recently adopted by the Commission on September 20, 2007 plus an Addendum addressing Climate Change and Greenhouse Gas Emissions adopted by the Commission on May 29, 2008) to assist in the preparation of RTPs pursuant to Section 14522 of the Government Code.

As the designated Regional Transportation Planning Agency (RTPA), Fresno 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 May 2007, which addressed transportation improvement projects, programs, and funding reflected in the 2004 RTP together with additional funding from the proposed (now approved) ½ Cent Sales Tax Measure Extension (Measure "C"). Measure "C" did receive the 2/3rds voter approval required in order to pass in the November 2006 election. The 2011 revision to the RTP must be prepared to address possible environmental impacts resulting from its implementation and 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 SEIR. The RTP is also used as a transportation planning document by each of the sixteen member jurisdictions of Fresno COG. The members include the County of Fresno and the cities of Clovis, Coalinga, Firebaugh, Fowler, Fresno, Huron, Kerman, Kingsburg, Mendota, Orange Cove, Parlier, Reedley, San Joaquin, Sanger, and Selma.

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. Additional areas of emphasis and policy initiatives in the 2011 RTP include Climate Change (including a Climate Change Element), Congestion Management Process, Environmental Justice, Goods Movement, and Blueprint Planning. In addition, the 2011 RTP will include updated project lists and updated performance measures.

The RTP will include the following sections, which may be reorganized or modified as a result of staff and consultant review:

1. San Joaquin Valley Regional Transportation Overview
2. Regional Setting, State and Federal Issues
3. Climate Change Element and Blueprint Issues
4. Policy Element

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5. Needs Assessment and Action Element
6. Financial Element

Specific environmental issues to be addressed in the SEIR include:

- Aesthetics
- Agricultural Resources
- Air Quality
- Biotic Resources
- Climate Change
- Cultural Resources
- Geology/Soils
- Hazards & Hazardous Materials
- Hydrology/Water Quality
- Land Use/Planning
- Noise
- Population/Housing
- Public Utilities, Other Utilities & Services Systems
- Transportation/Traffic
- Growth Inducement and Cumulative Effects

The project boundaries are the lawfully adopted borders of Fresno County, including the fifteen (15) incorporated cities, and the County (all unincorporated areas).

Requirement to Prepare a Subsequent EIR

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

- Substantial changes are proposed in the project which will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;
- Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR or Negative Declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or
- New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete or the Negative Declaration was adopted, shows any of the following:
  - The project will have one or more significant effects not discussed in the previous EIR or negative declaration
  - Significant effects previously examined will be substantially more severe than shown in the previous EIR
  - Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative
  - Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

In this case, Fresno COG understands that 2011 RTP improvement projects have changed or the timing of those projects has changed since certification of the previous RTP EIR in May 2007. As a result of these changes, rather than prepare a complete new EIR, Fresno COG desires to use the previous EIR and update/change sections to address RTP project changes, as well as greenhouse gas/global warming (Climate Change) issues.

Environmental Issues to be Addressed in the EIR

The programs and projects to be included in the RTP will be analyzed through development of a Program EIR. This will allow Fresno COG to analyze the regional or general impacts of the programs and projects. A more detailed or project level environmental assessment of the various projects included in the Plan will be conducted by the various responsible agencies including Caltrans, Fresno County, and the cities within the County before the projects are constructed or implemented.

The key environmental issues to be addressed in the Program EIR for the 2007 Revision of the RTP include:

- Aesthetics
  - Have a substantial adverse effect on a scenic vista
  - Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state or county designated scenic highway or county designated scenic road
  - Substantially degrade the existing visual character or quality of the site and its surroundings, which are open to public view
  - Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area
- Agriculture
  - Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use or if the area is not designated on the Important Farmland Series Maps, the conversion of prime agricultural land as defined in Section 51201(C) of the Govt. Code to non-agricultural use
  - Conflict with existing zoning for agriculture use, a Williamson Act contract, or provisions of the Model Farmland Conservation Program
- Air Quality
  - Conflict with or obstruct implementation of the applicable air quality plan
  - Violate any air quality standard or contribute substantially to an existing or projected air quality violation
  - Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors
  - Expose sensitive receptors to substantial pollutant concentrations
- Biological Resources
  - Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies or regulations, or by the California Dept. of Fish and Game or U.S. Fish and Wildlife Service
  - Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Dept. of Fish and Game or U.S. Fish and Wildlife Service
  - Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to: marsh, vernal pool, coastal, etc.) through direct filling, hydrological interruption, or other means
  - Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites
  - Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance
- Climate Change
  - The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting
  - Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project
  - The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. Such regulations or requirements must be adopted by the relevant public agency through a public review process and must include

specific requirements that reduce or mitigate the project's incremental contribution of greenhouse gas emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project

- Cultural Resources
  - Cause a substantial adverse change in the significance of an historical resource as defined in Section 15064.5
  - Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5
  - Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature of paleontological or culture value
  - Disturb any human remains, including those interred outside of formal cemeteries
  - Disturb unique architectural features or the character of surrounding buildings
- Geology, Soils, and Seismicity
  - Result in substantial soil erosion, situation, changes in topography, the loss of topsoil or unstable soil conditions from excavation, grading or fill
  - Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse
- Hazards and Hazardous Materials
  - Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials
  - Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment or risk of explosion
  - Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment
  - For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working the project area
  - For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area
- Hydrology and Water Quality
  - Violate any water quality standards or waste discharge requirements
  - Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site
  - Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course or stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site
  - Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff
- Land Use and Planning
  - Physically divide an established community
  - Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect
- Noise and Vibration
  - Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies
  - Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels
  - A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project
  - A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project
  - For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels

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- For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels

- Population and Housing
  - Substantially change the demographics in the area
  - Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)
  - Substantially alter the location, distribution, or density of the area's population
  - Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere
  - Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere

- Public or Utility Services
  - Electrical power or natural gas
  - Communication
  - Other public or utility services

- Utilities and Services Systems
  - Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction which could cause significant environmental effects

- Transportation/Traffic
  - Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)
  - Exceed, either individually or cumulatively, a level of service standard established by the County RTP
  - Result in a change in air, rail or water-borne traffic patterns, including either a significant increase in traffic levels or a change in location that results in substantial safety risks
  - Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses, hazards or barriers for vehicles, pedestrians, or bicyclists
  - Substantially accelerate physical deterioration of public and/or private roads

- Mandatory Findings of Significance
  - The project has the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of an endangered, rare or threatened plant or animal species, or eliminate important examples of the major periods of California history or prehistory
  - The project has environmental impacts that are individually limited, but cumulatively considerable
  - The project has environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Prepared by: Georgiena M. Vivian, VRPA Technologies, Inc. – August 27, 2009

Date: _____

Signature: _____
Tony Boren

Title: Executive Director

Phone: 559 233-4148

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Explanation of the Notice of Completion Form

This form is ***required*** to be submitted with 15 copies of every draft Environmental Impact Report which is reviewed through the State Clearinghouse (see CEQA Guidelines Section 15085[d]). It is used by the Clearinghouse for transmittal of all environmental documents

LEAD AGENCY

Project Title: This is the project's common name. It is best to use project specific words in order to facilitate database searches.

Lead Agency: This is the name of the public agency that has legal responsibility for preparation and review of the environmental document.

Contact Person: Name of contact person from the lead agency. This should not be the consultant's name.

Phone: Phone number of the contact person at lead agency.

Street Address: This is the mailing address for the contact person from the lead agency. State comments will be mailed to this address.

City: City of the lead agency address. This is not necessarily the city in which the project is located.

Zip: Zip code of the lead agency. Please indicate the new nine digit zip code if applicable.

County: County of the lead agency address. This is not necessarily the county in which the project is located.

PROJECT LOCATION

County: County in which the project is located. Most state agencies assign projects for review according to the county of the project. The State Clearinghouse is not always able to determine the location of the project based upon the address of the lead agency. An example of this problem is Los Angeles Department of Airports projects located at Ontario International Airport.

City/Nearest Community: City or town in which the project is located; or the nearest community to the location of the project.

Cross Streets: Indicate the nearest major cross streets or cross streets.

Total Acres: The total area encompassed by the project site gives some indication of the scope of the project and its regional significance.

Assessor's Parcel Number (optional): For locational purposes.

Section, Township, Range and Base: Please indicate base meridian. If you are not able to provide Assessor's Parcel Number, please indicate Section, Township, and Range.

Highways, Airports, Railroads, Schools, and Waterways (including streams or lakes): These identifiers are of consequence to many projects. By restricting the information to those features within a two-mile radius of the project site, unnecessary data collection can be avoided. Please indicate the name(s) of the waterways, airports, railroads, schools, and the route number(s) of the state highways.

DOCUMENT TYPE

This identifies the nature of the environmental document. Mark appropriate blanks with an "X".

LOCAL ACTION TYPE

This helps reviewers understand the type of local approvals that will be required for the project and the nature of the project and its environmental documentation. Mark appropriate blanks with "X".

DEVELOPMENT TYPE

This data category helps identify the scope of the project for distribution purposes. Additionally, the information also serves to identify projects of a similar character to assist in the reuse of environmental documents. For some of the development types, the form asks for the number of acres, square footage, and number of permanent employees. Fill in the blanks.

PROJECT ISSUES DISCUSSED IN DOCUMENT

These are the topics on which the environmental document focuses attention. These are not necessarily the adverse impacts of the project, but the issues which are discussed in some depth. Check appropriate blanks.

PRESENT LAND USE AND ZONING

This enables the agencies to understand the extent of the changes proposed and again helps to identify projects with similar environmental issues for later reuse of information.

PROJECT DESCRIPTION

This response should provide a thorough description of the proposed project enabling the reviewing agencies to understand the total project concept. The data categories can provide guidance and structure to the explanation given.

Reviewing Agencies Checklist:

REVIEWING AGENCIES

The back of the form lists the agencies and departments to whom the SCH may distribute a draft document. The lead agency can indicate for the SCH's information any responsible, trustee or concerned agencies which they would like to review the document, or who have previously been involved in the review of the project. Any agencies that have received the document directly from the lead agency should also be marked.

PUBLIC REVIEW PERIOD

This section is to be filled in when the Notice of Completion form is being filed and not being submitted with environmental documents.

CONSULTING FIRM

This information is to be filled in only if applicable.

APPLICANT

This identifies whether the applicant/project proponent is a private developer or the lead agency.

Form A

Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, PO Box 3044, Sacramento, CA 95812-3044 916/445-0613

SCH # _____

Project Title: Notice of Preparation of a Subsequent EIR for the 2011 Revision of the Madera County Regional Transportation Plan

Lead Agency: Madera County Transportation Commission — Contact Person: Richard Poythress

Street Address: 2035 Tulare Street, Suite 201 — Phone: (559) 233-4148

City: Fresno, CA — Zip: 93721 — County: Fresno

Project Location:

County: All — City/Nearest Community: Fresno

Cross Streets: _____ Zip Code: _____ Total Acres: _____

Assessor's Parcel No. _____ Section: _____ Twp. _____ Range: _____ Base: _____

Within 2 Miles: State Hwy #: _____ Waterways: _____

Airports: _____ Railways: _____ Schools: _____

Document Type:

CEQA:
- [x] NOP
- [ ] Early Cons
- [ ] Neg Dec
- [ ] Draft EIR
- [ ] Supplement/Subsequent EIR (Prior SCH No.)_____
- [ ] Other _____

NEPA:
- [ ] NOI
- [ ] EA
- [ ] Draft EIS
- [ ] FONSI

Other:
- [ ] Joint Document
- [ ] Final Document
- [ ] Other_____

Local Action Type:

- [ ] General Plan Update
- [ ] General Plan Amendment
- [ ] General Plan Element
- [ ] Community Plan
- [ ] Specific Plan
- [ ] Master Plan
- [ ] Planned Unit Development
- [ ] Site Plan
- [ ] Rezone
- [ ] Prezone
- [ ] Use Permit
- [ ] Land Division (Subdivision, etc.)
- [ ] Annexation
- [ ] Redevelopment
- [ ] Coastal Permit
- [x] Other RTP

Development Type:

- [ ] Residential: *Units*_____ *Acres*_____
- [ ] Office: *Sq.ft.*_____ *Acres*_____ *Employees*_____
- [ ] Commercial: *Sq.ft.*_____ *Acres*_____ *Employees*_____
- [ ] Industrial: *Sq.ft.*_____ *Acres*_____ *Employees*_____
- [ ] Educational _____
- [ ] Recreational _____
- [ ] Water Facilities: *Type*_____ *MGD*_____
- [x] Transportation: *Type* Planned Facilities
- [ ] Mining: *Mineral*_____
- [ ] Power: *Type*_____ *Watts*_____
- [ ] Waste Treatment: *Type*_____
- [ ] Hazardous Waste: *Type*_____
- [ ] Other:_____

Funding (approx.): Federal $_____ State $_____ Total $_____

Project Issues Discussed in Document:

- [x] Aesthetic/Visual
- [x] Agricultural Land
- [x] Air Quality
- [x] Archeological/Historical
- [ ] Coastal Zone
- [x] Drainage/Absorption
- [x] Economic/Jobs
- [ ] Fiscal
- [x] Flood Plain/Flooding
- [ ] Forest Land/Fire Hazard
- [x] Geologic/Seismic
- [ ] Minerals
- [x] Noise
- [x] Population/Housing Balance
- [x] Public Services/Facilities
- [ ] Recreation/Parks
- [ ] Schools/Universities
- [x] Septic Systems
- [ ] Sewer Capacity
- [x] Soil Erosion/Compaction/Grading
- [ ] Solid Waste
- [x] Toxic/Hazardous
- [x] Traffic/Circulation
- [x] Vegetation
- [x] Water Quality
- [x] Water Supply/Groundwater
- [x] Wetland/Riparian
- [x] Wildlife
- [x] Growth Inducing
- [x] Landuse
- [x] Cumulative Effects
- [ ] Other _____

Present Land Use/Zoning/General Plan Designation:

Various

Project Description:

Preparation and approval of the 2011 Revision of the Fresno County Regional Transportation Plan (RTP). See attached.

Revised 3-31-99

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Reviewing Agencies Checklist

Form A, continued

KEY
S = Document sent by lead agency
X = Document sent by SCH
✓ = Suggested distribution

____**Resources Agency**
____Boating & Waterways
____Coastal Commission
____Coastal Conservancy
____Colorado River Board
____Conservation
____Fish & Game
____Forestry & Fire Protection
____Office of Historic Preservation
____Parks & Recreation
____Reclamation Board
____S.F. Bay Conservation & Development Commission
____Water Resources (DWR)

Business, Transportation & Housing
____Aeronautics
____California Highway Patrol
____CALTRANS District #_____
____Department of Transportation Planning (headquarters)
____Housing & Community Development

____**Food & Agriculture**

Health & Welfare
____Health Services _____

State & Consumer Services
____General Services
____OLA (Schools)

Environmental Protection Agency
____Air Resources Board
____California Waste Management Board
____SWRCB: Clean Water Grants
____SWRCB: Delta Unit
____SWRCB: Water Quality
____SWRCB: Water Rights
____Regional WQCB #_____ (_____)

Youth & Adult Corrections
____Corrections

Independent Commissions & Offices
____Energy Commission
____Native American Heritage Commission
____Public Utilities Commission
____Santa Monica Mountains Conservancy
____State Lands Commission
____Tahoe Regional Planning Agency

____Other _____

Public Review Period (to be filled in by lead agency)

Starting Date September 10, 2009 Ending Date October 10, 2009

Signature _____ Date September 8, 2009

Lead Agency (Complete if applicable):
Consulting Firm: VRPA Technologies, Inc.
Address: 4630 W. Jennifer, Suite 105
City/State/Zip: Fresno, CA 93722
Contact: Ms. Georgiena Vivian
Phone: (559) 271-1200 or (559) 259-9257

Applicant: Council of Fresno County of Governments
Address: 2035 Tulare Street, Suite 201
City/State/Zip: Fresno, CA 93721
Phone: (559) 233-4148

For SCH Use Only:
Date Received at SCH _____
Date Review Starts _____
Date to Agencies _____
Date to SCH _____
Clearance Date _____
Notes:

APPENDIX B – NOTICE OF PREPARATION COMMENTS RECEIVED

STATE OF CALIFORNIA

GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH

STATE CLEARINGHOUSE AND PLANNING UNIT

ARNOLD SCHWARZENEGGER
GOVERNOR

CYNTHIA BRYANT
DIRECTOR

Notice of Preparation

September 9, 2009

To: Reviewing Agencies

Re: Proposed 2011 Revision of the Regional Transportation Plan (RTP)
SCH# 2006121100

Attached for your review and comment is the Notice of Preparation (NOP) for the Proposed 2011 Revision of the Regional Transportation Plan (RTP) draft Environmental Impact Report (EIR).

Responsible agencies must transmit their comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of the NOP from the Lead Agency. This is a courtesy notice provided by the State Clearinghouse with a reminder for you to comment in a timely manner. We encourage other agencies to also respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

Clark Thompson
Fresno County Council of Governments
2035 Tulare Street, Suite 201
Fresno, CA 93721

with a copy to the State Clearinghouse in the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the environmental document review process, please call the State Clearinghouse at (916) 445-0613.

Sincerely,

Scott Morgan
Acting Director

Attachments
cc: Lead Agency

RECEIVED
SEP 14 2009
BY:
FRESNO COG

1400 10th Street P.O. Box 3044 Sacramento, California 95812-3044
(916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

Document Details Report
State Clearinghouse Data Base

SCH# **2006121100**
Project Title Proposed 2011 Revision of the Regional Transportation Plan (RTP)
Lead Agency Fresno County Council of Governments

Type **NOP** Notice of Preparation

Description The project, as defined by CEQA Statues, Section 21065, is the preparation of the 2011 revision of the RTP. As the designated Regional Transportation Planning Agency (RTPA), Fresno 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 May 2007, which addressed transportation improvement projects, programs, and funding reflected in the 2004 RTP together with additional funding from the proposed (now approved) ½ Cent Sales Tax Measure Extension (Measure "C"). Measure "C" did receive the 2/3rds voter approval required in order to pass in the November 2006 election. The 2011 revision to the RTP must be prepared to address possible environmental impacts resulting from its implementation and 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 SEIR. The RTP is also used as a transportation planning document by each of the sixteen member jurisdictions of Fresno COG. The members include the County of Fresno and the cities of Clovis, Coalinga, Firebaugh, Fowler, Fresno, Huron, Kerman, Kingsburg, Mendota, Orange Cove, Parlier, Reedley, San Joaquin, Sanger, and Selma.

Lead Agency Contact

Name Clark Thompson
Agency Fresno County Council of Governments
Phone (559) 233-4148 ***Fax*** (559) 233-9645
email
Address 2035 Tulare Street, Suite 201
City Fresno ***State*** CA ***Zip*** 93721

Project Location

County Fresno
City Fresno
Region
Cross Streets
Lat / Long
Parcel No.
Township ***Range*** ***Section*** ***Base***

Proximity to:

Highways
Airports
Railways
Waterways
Schools
Land Use Various

Project Issues Aesthetic/Visual; Agricultural Land; Air Quality; Biological Resources; Other Issues; Geologic/Seismic; Toxic/Hazardous; Water Quality; Landuse; Noise; Population/Housing Balance; Public Services; Traffic/Circulation; Growth Inducing; Cumulative Effects

Note: Blanks in data fields result from insufficient information provided by lead agency.

Document Details Report
State Clearinghouse Data Base

Reviewing Agencies	Resources Agency; Department of Conservation; Department of Parks and Recreation; Department of Water Resources; Department of Fish and Game, Region 4; Native American Heritage Commission; Caltrans, Division of Transportation Planning; California Highway Patrol; Caltrans, District 6; Air Resources Board, Transportation Projects; Department of Toxic Substances Control; Regional Water Quality Control Bd., Region 5 (Fresno)

Date Received 09/09/2009 ***Start of Review*** 09/09/2009 ***End of Review*** 10/08/2009

Note: Blanks in data fields result from insufficient information provided by lead agency.

NOP Distribution List

County: FRESNO

SCH# 2006121100

esources Agency

- Resources Agency
  Nadell Gayou
- Dept. of Boating & Waterways
  Mike Sotelo
- California Coastal Commission
  Elizabeth A. Fuchs
- Colorado River Board
  Gerald R. Zimmerman
- Dept. of Conservation
  Rebecca Salazar
- California Energy Commission
  Dale Edwards
- Cal Fire
  Allen Robertson
- Office of Historic Preservation
  Wayne Donaldson
- Dept of Parks & Recreation
  Environmental Stewardship Section
- Central Valley Flood Protection Board
  Jon Yego
- S.F. Bay Conservation & Dev't. Comm.
  Steve McAdam
- Dept. of Water Resources
  Resources Agency
  Nadell Gayou

_____
Conservancy

n and Game

- Depart. of Fish & Game
  Scott Flint
  Environmental Services Division
- Fish & Game Region 1
  Donald Koch
- Fish & Game Region 1E
  Laurie Harnsberger
- ☐ Fish & Game Region 2
  Jeff Drongesen
- ☐ Fish & Game Region 3
  Robert Floerke
- ☐ Fish & Game Region 4
  Julie Vance
- ☐ Fish & Game Region 5
  Don Chadwick
  Habitat Conservation Program
- ☐ Fish & Game Region 6
  Gabrina Gatchel
  Habitat Conservation Program
- ☐ Fish & Game Region 6 I/M
  Gabrina Getchel
  Inyo/Mono, Habitat Conservation Program
- ☐ Dept. of Fish & Game M
  George Isaac
  Marine Region

Other Departments

- ☐ Food & Agriculture
  Steve Shaffer
  Dept. of Food and Agriculture
- ☐ Depart. of General Services
  Public School Construction
- ☐ Dept. of General Services
  Anna Garbeff
  Environmental Services Section
- ☐ Dept. of Public Health
  Bridgette Binning
  Dept. of Health/Drinking Water

Independent Commissions,Boards

- ☐ Delta Protection Commission
  Linda Flack
- ☐ Office of Emergency Services
  Dennis Castrillo
- ☐ Governor's Office of Planning & Research
  State Clearinghouse
- ■ Native American Heritage Comm.
  Debbie Treadway
- ☐ Public Utilities Commission
  Leo Wong
- ☐ Santa Monica Bay Restoration
  Guangyu Wang
- ☐ State Lands Commission
  Marina Brand
- ☐ Tahoe Regional Planning Agency (TRPA)
  Cherry Jacques

Business, Trans & Housing

- ☐ Caltrans - Division of Aeronautics
  Sandy Hesnard
- ■ Caltrans - Planning
  Terri Pencovic
- ■ California Highway Patrol
  Scott Loetscher
  Office of Special Projects
- ☐ Housing & Community Development
  CEQA Coordinator
  Housing Policy Division

Dept. of Transportation

- ☐ Caltrans, District 1
  Rex Jackman
- ☐ Caltrans, District 2
  Marcelino Gonzalez
- ☐ Caltrans, District 3
  Bruce de Terra
- ☐ Caltrans, District 4
  Lisa Carboni
- ☐ Caltrans, District 5
  David Murray
- ■ Caltrans, District 6
  Michael Navarro
- ☐ Caltrans, District 7
  Elmer Alvarez
- ☐ Caltrans, District 8
  Dan Kopulsky
- ☐ Caltrans, District 9
  Gayle Rosander
- ☐ Caltrans, District 10
  Tom Dumas
- ☐ Caltrans, District 11
  Jacob Armstrong
- ☐ Caltrans, District 12
  Chris Herre

Cal EPA

Air Resources Board

- ☐ Airport Projects
  Jim Lerner
  - ■ Transportation Projects
    Douglas Ito
  - ☐ Industrial Projects
    Mike Tollstrup
- ☐ California Integrated Waste Management Board
  Sue O'Leary
- ☐ State Water Resources Control Board
  Regional Programs Unit
  Division of Financial Assistance
- ☐ State Water Resources Control Board
  Student Intern, 401 Water Quality Certification Unit
  Division of Water Quality
- ☐ State Water Resouces Control Board
  Steven Herrera
  Division of Water Rights
- ■ Dept. of Toxic Substances Control
  CEQA Tracking Center
- ☐ Department of Pesticide Regulation
  CEQA Coordinator

Regional Water Quality Control Board (RWQCB)

- ☐ RWQCB 1
  Cathleen Hudson
  North Coast Region (1)
- ☐ RWQCB 2
  Environmental Document Coordinator
  San Francisco Bay Region (2)
- ☐ RWQCB 3
  Central Coast Region (3)
- ☐ RWQCB 4
  Teresa Rodgers
  Los Angeles Region (4)
- ☐ RWQCB 5S
  Central Valley Region (5)
  - ■ RWQCB 5F
    Central Valley Region (5)
    Fresno Branch Office
  - ☐ RWQCB 5R
    Central Valley Region (5)
    Redding Branch Office
- ☐ RWQCB 6
  Lahontan Region (6)
  - ☐ RWQCB 6V
    Lahontan Region (6)
    Victorville Branch Office
- ☐ RWQCB 7
  Colorado River Basin Region (7)
- ☐ RWQCB 8
  Santa Ana Region (8)
- ☐ RWQCB 9
  San Diego Region (9)

☐ Other _____

Last Updated on 03/24/2009

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, SACRAMENTO
CORPS OF ENGINEERS
1325 J STREET
SACRAMENTO CA 95814-2922

REPLY TO
ATTENTION OF

September 21, 2009

RECEIVED
SEP 24 2009
BY:
FRESNO COG

Regulatory Division SPK-2009-01305

Mr. Clark Thompson
Fresno County
Council of Governments
2035 Tulare Street, Suite 201
Fresno, California 93721

Dear Mr. Thompson:

We are responding to your September 8, 2009, request for comments on the Proposed 2011 Revision of the Regional Transportation Plan (RTP), Subsequent Environmental Impact Report. The project location is Fresno County, Section 35, Township 13 South, Range 21 East, Latitude 36.75874°, Longitude -119.65444°, MDB&M Survey, Fresno County, California. Your identification number is SPK-2009-01305.

The Corps of Engineers' jurisdiction within the study area is under the authority of Section 404 of the Clean Water Act for the discharge of dredged or fill material into waters of the United States. Waters of the United States include, but are not limited to, rivers, perennial or intermittent streams, lakes, ponds, wetlands, vernal pools, marshes, wet meadows, and seeps. Project features that result in the discharge of dredged or fill material into waters of the United States will require Department of the Army authorization prior to starting work.

To ascertain the extent of waters on the project site, the applicant should prepare preliminary wetland delineation, in accordance with the "Minimum Standards for Acceptance of Preliminary Wetland Delineations", under "Jurisdiction" on our website at the address below, and submit it to this office for verification. A list of consultants that prepare wetland delineations and permit application documents is also available on our website at the same location.

The range of alternatives considered for this project should include alternatives that avoid impacts to wetlands or other waters of the United States. Every effort should be made to avoid project features which require the discharge of dredged or fill material into waters of the United States. In the event it can be clearly demonstrated there are no practicable alternatives to filling waters of the United States, mitigation plans should be developed to compensate for the unavoidable losses resulting from project implementation.

Under Section 404(b)1 of the CWA, proposed discharges of dredged or fill material must conform to guidelines developed by the U. S. Environmental Protection Agency (USEPA). It is

-2-

mandatory that the 404(b)1 Guidelines (Guidelines) be applied to all proposed discharges of dredged and fill material that are subject to approval under Section 404.

It is critical for you to note that our Section 404(b)1 Guidelines only allow permit issuance for the least environmentally damaging practicable alternative (LEDPA) in light of the overall project purpose, after weighing the practicability of other alternatives in terms of cost, existing technology, and logistics.

We appreciate your feedback. At your earliest convenience, please tell us how we are doing by completing the customer survey on our website at: http://per2.nwp.usace.army.mil/survey.html.

Please refer to identification number SPK-2009-01305 in any correspondence concerning this project. If you have any questions, please contact Ms. Leah Fisher at our California South Branch Office, 1325 J Street, Room 1480, Sacramento, California 95814-2922 email *leah.m.fisher@usace.army.mil*, or telephone 916-557-6639. You may also use our website: *www.spk.usace.army.mil/regulatory.html*.

Sincerely,

Paul M. Maniccia
Chief, California South Branch

County of Fresno
Department of Public Health
Edward L. Moreno, M.D., M.P.H., Director-Health Officer

September 30, 2009

999999999
LU0015373
PE 2600

Clark Thompson
Council of Fresno County Governments
2035 Tulare Street, Suite 201
Fresno, CA 93721

Dear Mr. Carbajal:

SUBJECT: Notice of Preparation of a Subsequent Environmental Impact Report (SEIR) for the Proposed 2011 Revision of the Regional Transportation Plan (RTP)

The Fresno County Department of Public Health, Environmental Health Division has reviewed the project description, locale and probable environmental issues to be addressed in the SEIR and concurs with the information contained therein. This Department would appreciate the opportunity to the SEIR when completed. (electronic preferred)

If I can be of further assistance, please contact me at (559) 445-3357.

Sincerely,

Glenn Allen

Digitally signed by Glenn Allen
DN: cn=Glenn Allen, o=Environmental Health Division, ou=Public Health, email=glallen@co.fresno.ca.us, c=US
Date: 2009.09.30 15:34:27 -07'00'

R.E.H.S., M.S.
Environmental Health Specialist III
Environmental Health Division

ga

COG NOP of SEIR for RTP

1221 Fulton Mall / P.O. Box 11867 / Fresno, California 93775 / (559) 445-3357 / FAX (559) 445-3379
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County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
ALAN WEAVER, DIRECTOR

September 30, 2009

Clark Thomson, Planner III
Council of Fresno County Governments
2035 Tulare Street, Suite 201
Fresno, CA 93721

Dear Mr. Thomson:

Subject: Notice of Preparation of SEIR for the Proposed 2011 Revision of the Regional Transport Plan.

The County of Fresno appreciates the opportunity to comment on the scope of the SEIR for the Proposed 2011 Revision of the Regional Transport Plan. The County has reviewed the environmental issues to be addressed in the SEIR, and has no comments to offer at this time.

We look forward to reviewing the Draft SEIR. If you have any questions, you may e-mail me at hkinuthia@co.fresno.ca.us or contact me at (559) 262-4172.

Sincerely,

Henry Kinuthia, Planner
Development Services Division

HK:mac
G:\4360Devs&Pln\EnvPlan\OAR\Council of Fresno County Governments -COG\Regional Transport Plan\Comment Letter.doc

c: Theresa Acosta-Mena, Senior Planner, Environmental Analysis Unit

RECEIVED
OCT 0 6 2009
BY:
FRESNO COG

DEVELOPMENT SERVICES DIVISION

2220 Tulare Street, Sixth Floor / Fresno, California 93721 / Phone (559) 262-4497 / 262-4022 / 262-4029 / 262-4211 FAX 262-4893
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STATE OF CALIFORNIA Arnold Schwarzenegger, Governor

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-6251
Fax (916) 657-5390
Web Site www.nahc.ca.gov
e-mail: ds_nahc@pacbell.net

September 23, 2009

RECEIVED
SEP 25 2009
BY:_____
FRESNO COG

Mr. Clark Thompson
FRESNO COUNTY COUNCIL OF GOVERNMENTS
2035 Tulare Street, Suite 201
Fresno, CA 92721

Re: SCH#2006121100 CEQA Notice of Preparation (NOP); Subsequent Environmental Impact Report (SEIR) for the **2011 Revision of the Regional Transportation Plan (RTP)** located in Fresno County, California

Dear Mr. Thompson:

The Native American Heritage Commission (NAHC) is the state 'trustee agency' pursuant to Public Resources Code §21070 for the protection and preservation of California's Native American Cultural Resources.. The California Environmental Quality Act (CEQA - CA Public Resources Code §21000-21177, amended in 2009) requires that any project that causes a substantial adverse change in the significance of an historical resource, that includes archaeological resources, is a 'significant effect' requiring the preparation of an Environmental Impact Report (EIR) per the California Code of Regulations §15064.5(b)(c)(f) CEQA guidelines). Section 15382 of the CEQA Guidelines defines a significant impact on the environment as "a substantial, or potentially substantial, adverse change in any of physical conditions within an area affected by the proposed project, including ...objects of historic or aesthetic significance." In order to comply with this provision, the lead agency is required to assess whether the project will have an adverse impact on these resources within the 'area of potential effect (APE)', and if so, to mitigate that effect. To adequately assess the project-related impacts on historical resources, the Commission recommends the following.

The Native American Heritage Commission did perform a Sacred Lands File (SLF) search in the NAHC SLF Inventory, established by the Legislature pursuant to Public Resources Code §5097.94(a) and Native American Cultural resources **were not identified** within one-half mile of the APEs... Early consultation with Native American tribes in your area is the best way to avoid unanticipated discoveries once a project is underway. Enclosed are the names of the nearest tribes and interested Native American individuals that the NAHC recommends as 'consulting parties,' for this purpose, that may have knowledge of the religious and cultural significance of the historic properties in the project area (e.g. APE). We recommend that you contact persons on the attached list of Native American contacts. A Native American Tribe or Tribal Elder may be the only source of information about a cultural resource.. Also, the NAHC recommends that a Native American Monitor or person be employed whenever a professional archaeologist is employed during the 'Initial Study' and in other phases of the environmental study.. Furthermore we suggest that you contact the California Historic Resources Information System (CHRIS) at the Office of Historic Preservation (OHP) Coordinator's office (at (916) 653-7278, for referral to the nearest OHP Information Center of which there are 11..

Consultation with tribes and interested Native American tribes and individuals, as consulting parties, on the NAHC list ,should be conducted in compliance with the requirements of federal NEPA (42 U.S.C. 4321-43351) and Section 106 and 4(f) of federal NHPA (16 U.S.C. 470 [f]*et se),* and NAGPRA (25 U.S.C. 3001-3013), as appropriate. .

Lead agencies should consider avoidance, as defined in Section 15370 of the California Environmental Quality Act (CEQA) when significant cultural resources could be affected by a

project. Also, Public Resources Code Section 5097.98 and Health & Safety Code Section 7050.5 provide for provisions for accidentally discovered archeological resources during construction and mandate the processes to be followed in the event of an accidental discovery of any human remains in a project location other than a 'dedicated cemetery. Discussion of these should be included in your environmental documents, as appropriate.

The authority for the SLF record search of the NAHC Sacred Lands Inventory, established by the California Legislature, is California Public Resources Code §5097.94(a) and is exempt from the CA Public Records Act (c.f. California Government Code §6254.10). The results of the SLF search are confidential. However, Native Americans on the attached contact list are not prohibited from and may wish to reveal the nature of identified cultural resources/historic properties. Confidentiality of "historic properties of religious and cultural significance' may also be protected the under Section 304 of the NHPA or at the Secretary of the Interior' discretion if not eligible for listing on the National Register of Historic Places. The Secretary may also be advised by the federal Indian Religious Freedom Act (cf. 42 U.S.C, 1996) in issuing a decision on whether or not to disclose items of religious and/or cultural significance identified in or near the APE and possibly threatened by proposed project activity.

CEQA Guidelines, Section 15064.5(d) requires the lead agency to work with the Native Americans identified by this Commission if the initial Study identifies the presence or likely presence of Native American human remains within the APE. CEQA Guidelines provide for agreements with Native American, identified by the NAHC, to assure the appropriate and dignified treatment of Native American human remains and any associated grave liens.

Health and Safety Code §7050.5, Public Resources Code §5097.98 and Sec. §15064.5 (d) of the California Code of Regulations (CEQA Guidelines) mandate procedures to be followed, including that construction or excavation be stopped in the event of an accidental discovery of any human remains in a location other than a dedicated cemetery until the county coroner or medical examiner can determine whether the remains are those of a Native American. . Note that §7052 of the Health & Safety Code states that disturbance of Native American cemeteries is a felony.

Again, Lead agencies should consider avoidance, as defined in §15370 of the California Code of Regulations (CEQA Guidelines), when significant cultural resources are discovered during the course of project planning and implementation

Please feel free to contact me at (916) 653-6251 if you have any questions.

Sincerely,

Dave Singleton
Program Analyst

Attachment: List of Native American Contacts

Cc: State Clearinghouse

Native American Contact
Fresno County
September 23, 2009

Big Sandy Rancheria of Mono Indians
Liz Hutchins Kipp, Chairperson
P.O. Box 337 / 37302 — Western Mono
Auberry , CA 93602
cl@bigsandyrancheria.com
(559) 855-4003
(559) 855-4129 Fax

Dunlap Band of Mono Indians
Benjamin Charley, Sr., Chairperson
Box 45 — Mono
Dunlap , CA 93621
(559) 338-2545

Cold Springs Rancheria of Mono Indians
Travis Coleman, Chairperson
P.O. Box 209 — Mono
Tollhouse , CA 93667
tcoleman@ca.ihs.gov
(559) 855-5043
559-855-4445 - FAX

Dumna Wo-Wah Tribal Goverment
Keith F. Turner, Tribal Contact
P.O. Box 306 — Dumna/Foothill
Auberry , CA 93602 — Mono
(559) 855-3128 Home
(559) 696-0191 (Cell)

North Fork Mono Tribe
Ron Goode, Chairperson
13396 Tollhouse Road — Mono
Clovis , CA 93619
eagleye@cuip.net
(559) 299-3729 Home

Sierra Nevada Native American Coalition
Lawrence Bill, Interim Chairperson
P.O. 125 — Mono
Dunlap , CA 93621 — Foothill Yokuts
(559) 338-2354

Santa Rosa Rancheria
Chairperson
P.O. Box 8 — Tache
Lemoore , CA 93245 — Tachi
(559) 924-1278 — Yokut
(559) 924-3583 Fax

Choinumni Tribe; Choinumni/Mono
Lorrie Planas
2736 Palo Alto — Choinumni
Clovis , CA 93611 — Mono

Table Mountain Rancheria
Lee Ann Walker Grant, Chairperson
P.O. Box 410 — Yokuts
Friant , CA 93626-0177
(559) 822-2587
(559) 822-2693 FAX

Table Mountain Rancheria
Bob Pennell, Cultural Resources Director
P.O. Box 410 — Yokuts
Friant , CA 93626-0177
(559) 325-0351
(559) 217-9718 - cell
(559) 325-0394 FAX

This list is current only as of the date of this document.
Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code. and federal NEPA (42 USC 4321-43351), NHPA Sections 106, 4(f) (16 USC 470(f) and NAGPRA (25 USC 3001-3013)

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed SCH#2006121100; CEQA Notice of Preparation (NOP); Subsequent Environmental Impact Report (SEIR) for the 2011 Revision of the Regional Transportation Plan (RTP); Fresno County, California.

Native American Contact
Fresno County
September 23, 2009

Kings River Choinumni Farm Tribe
John Davis, Chairman
1064 Oxford Avenue — Foothill Yokuts
Clovis , CA 93612-2211 — Choinumni
559-324-9908

The Choinumni Tribe of Yokuts
Rosemary Smith, Chairperson
1505 Barstow — Choinumni
Clovis , CA 96311 — Foothill YoKut
monoclovis@yahoo.com
559-862-5757

Dunlap Band of Mono Indians
Mandy Marine, Board Chairperson
Box 44 — Mono
Dunlap , CA 93624
mandy@dunlapmono.org
559-338-2545

Dumna Tribal Government
Jim Redmoon - Cultural Resources Representative
724 W. Fountain — Dumna/Foothill
Fresno , CA 93705 — Choinumni
559-243--9926

Chowchilla Tribe of Yokuts
Jerry Brown
10553 N. Rice Road — North Valley Yokuts
Fresno , CA 93720
559-434-3160

Cold Springs Rancheria of Mono Indians
Carol Bill - Tribal Administrator
PO Box 209 — Mono
Tollhouse , CA 93667
coldsprgstribe@netpt
(559) 855-5043

(559) 855-4445 - FAX

This list is current only as of the date of this document.
Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code. and federal NEPA (42 USC 4321-43351), NHPA Sections 106, 4(f) (16 USC 470(f) and NAGPRA (25 USC 3001-3013)

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed SCH#2006121100; CEQA Notice of Preparation (NOP); Subsequent Environmental Impact Report (SEIR) for the 2011 Revision of the Regional Transportation Plan (RTP); Fresno County, California.

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION
DIVISION OF AERONAUTICS – M.S.#40
1120 N STREET
P. O. BOX 942874
SACRAMENTO, CA 94274-0001
PHONE (916) 654-4959
FAX (916) 653-9531
TTY 711

Flex your power!
Be energy efficient!

September 24, 2009

Mr. Clark Thompson
Council of Fresno County of Governments
2035 Tulare Street, Suite 201
Fresno, CA 93721

RECEIVED
OCT 05 2009
BY:
FRESNO COG

Dear Mr. Thompson:

Notice of Preparation of a Subsequent Environmental Impact Report for the 2011 Revision of the Fresno County Regional Transportation Plan

The California Department of Transportation (Caltrans), Division of Aeronautics (Division), reviewed the above-referenced document with respect to airport-related noise and safety impacts and regional aviation land use planning issues pursuant to the California Environmental Quality Act (CEQA). The Division has technical expertise in the areas of airport operations safety and airport land use compatibility. We are a funding agency for airport projects and we have permit authority for public-use and special-use airports and heliports.

The proposal is to update to the Fresno County Regional Transportation Plan (RTP). The RTP is the programming document used to plan the construction of regional transportation projects.

Within Fresno County are numerous airports and heliports including the following public-use airports: Coalinga Municipal, Firebaugh, Fresno Chandler Executive, Fresno Yosemite International, Harris Ranch, Mendota, Reedley Municipal, Selma, and Sierra Sky Park Airports.

Aviation plays a significant role in California's transportation system. The regional transportation planning process provides the opportunity to discuss the connection between land use and transportation planning and should address regional aviation issues and needs. Strong and effective local, regional, and state policies minimize adverse impacts arising from the encroachment of incompatible land uses around airports, adverse noise impacts on communities near airports, and congestion and/or delays related to airport ground access.

The protection of airports from incompatible land use encroachment is vital to the safety of airport operations and the well being of the communities around airports. As discussed in the Division's "Aviation Planning Guidelines for Regional Transportation Plans" the best way to preserve and improve airports and their associated economic and quality-of-life benefits is to take timely proactive measures. Incompatible land uses around airports often result in public pressure to restrict operations (curfews, aircraft size limits, etc.), and impose noise, and growth controls. Failure to protect the airport may result in permanent closure, thereby reducing or eliminating its benefits. The Division's RTP Guidelines are available at http://www.dot.ca.gov/hq/planning/aeronaut/documents/rtpSept2009guidelines.pdf. For questions concerning these guidelines, please contact the Division's liaison for Fresno County RTP review, Carol Glatfelter at (916) 654-5253.

"Caltrans improves mobility across California"

Mr. Clark Thompson
September 24, 2009
Page 2

The California Airport Land Use Planning Handbook (Handbook) is also an excellent resource that should be applied to all public use airports. The Handbook is available on-line at http://www.dot.ca.gov/hq/planning/aeronaut/htmlfile/landuse.php.

Aviation plays a significant role in California's transportation system. This role includes the movement of people and goods within and beyond our State's network of over 250 airports. Aviation contributes nearly 9 percent of both total State employment (1.7 million jobs) and total State output of $110.7 billion annually. Aviation improves mobility, generates tax revenue, saves lives through emergency response, medical and fire fighting services, annually transports air cargo valued at over $170 billion and generates over $14 billion in tourist dollars, which in turn improves our economy and quality of life. These benefits were identified in a study entitled "Aviation in California: Benefits to Our Economy and Way of Life" available on-line at http://www.dot.ca.gov/hq/planning/aeronaut/econstudy2003.html.

Although the need for compatible and safe land uses near airports is both a local and State issue, it is also a regional issue. Airport staff, Airport Land Use Commissions (ALUC) and airport land use compatibility plans are key to protecting an airport and the people residing and working in the vicinity of an airport. Coordinating the RTP with these other agencies should help to relieve future conflicts between airports and their neighbors.

These comments reflect the areas of concern to the Division of Aeronautics with respect to airport-related noise, safety, and regional land use planning issues. We advise you to contact our District 6 office concerning surface transportation issues.

Thank you for the opportunity to review and comment on this proposal. If you have any questions, please call me at (916) 654-5314 or by email at sandy.hesnard@dot.ca.gov.

Sincerely,

Sandy Hesnard

SANDY HESNARD
Aviation Environmental Specialist

c: State Clearinghouse, Fresno County ALUC

"Caltrans improves mobility across California"

Chevron

Lee Higgins, PG
Environmental Project Manager

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October 6, 2009

Stakeholder Correspondence–Council of Fresno County Governments

Mr. Clark Thompson
Planner III
Council of Fresno County Governments
2035 Tulare Street, Suite 201
Fresno, CA 93721

Subject: **Comments for the Notice of Preparation of a Subsequent Environmental Impact Report for the Proposed 2011 Revision of the Regional Transportation Plan**
Chevron Environmental Management Company
Historic Pipeline Alignment–Bakersfield to Richmond

Dear Mr. Thompson:

Chevron Environmental Management Company (CEMC) recently became aware of the Notice of Preparation of a Subsequent Environmental Impact Report for the Proposed 2011 Revision of the Regional Transportation Plan (RTP). The purpose of this letter is to notify stakeholders of the Council of Fresno County Governments (COFCG) as to the location of formerly active crude-oil transportation pipelines in Fresno County (Figure 1). The intent is that the pipeline location information will be incorporated into future engineering and environmental documents associated with the revised RTP.

In the early 1900s, Tidewater Associated Oil Company (TAOC) and Standard Oil (Standard) built pipeline systems to transport heavy crude oil from oilfields in the southern San Joaquin Valley to refineries in the San Francisco Bay Area. These pipelines were operated until the early 1970s when they were decommissioned. Currently, CEMC manages work associated with these historic pipelines.

Evidence of historic releases associated with the formerly active pipelines is sometimes identified during the course of underground utility work and other subsurface construction activities near the pipeline right of ways. Generally, residual weathered crude oil associated with TAOC's and Standard's historical pipeline operations can be observed visually; however, analytical testing is necessary to confirm that the likely source of the affected material is associated with these former pipelines. Analytical results from human health risk assessments performed by CEMC at several known historical pipeline release sites confirm that soil affected by the historic release of product from the pipelines is non-hazardous, and does not pose significant health risks.

CEMC's experience indicates that the potential exists for subsurface soil along and near the former TAOC and Standard alignments to be affected by undocumented residual weathered crude oil; however, encountering affected soil from these former pipelines should not delay the progress of COFCG projects. CEMC requests to be informed of planned projects in the vicinity of the former TAOC and Standard alignments. In addition, to facilitate the identification of transportation corridors in Fresno County along

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Mr. Clark Thompson – COFCG Planner III
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the pipeline easements that are proposed for construction, Chevron requests that Geographic Information System (GIS) regional transportation planning data be provided. At your request, Chevron will provide GIS data that illustrates the location of the former TAOC and Standard pipelines in Fresno County.

For more information regarding the Historical Pipeline Portfolio–Bakersfield to Richmond alignment, please visit http://www.hppinfo.com/. If you have any questions, require additional information, or would like to request more detailed maps, please call SAIC consultants Tom Burns at (916) 979-3748 or Daniel Anzelon (858) 826-3316.

Sincerely,

Lee Higgins, PG

LPH/klg

Enclosures:
Figure 1. Historic Pipeline Alignments within Fresno County

cc: Mr. Tom Burns – SAIC
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Mr. Mike Jenkins – SAIC (letter only)
3800 Watt Avenue, Suite 210, Sacramento, California 95821
Mr. Mohamed Ibrahim – SAIC
3800 Watt Avenue, Suite 210, Sacramento, California 95821
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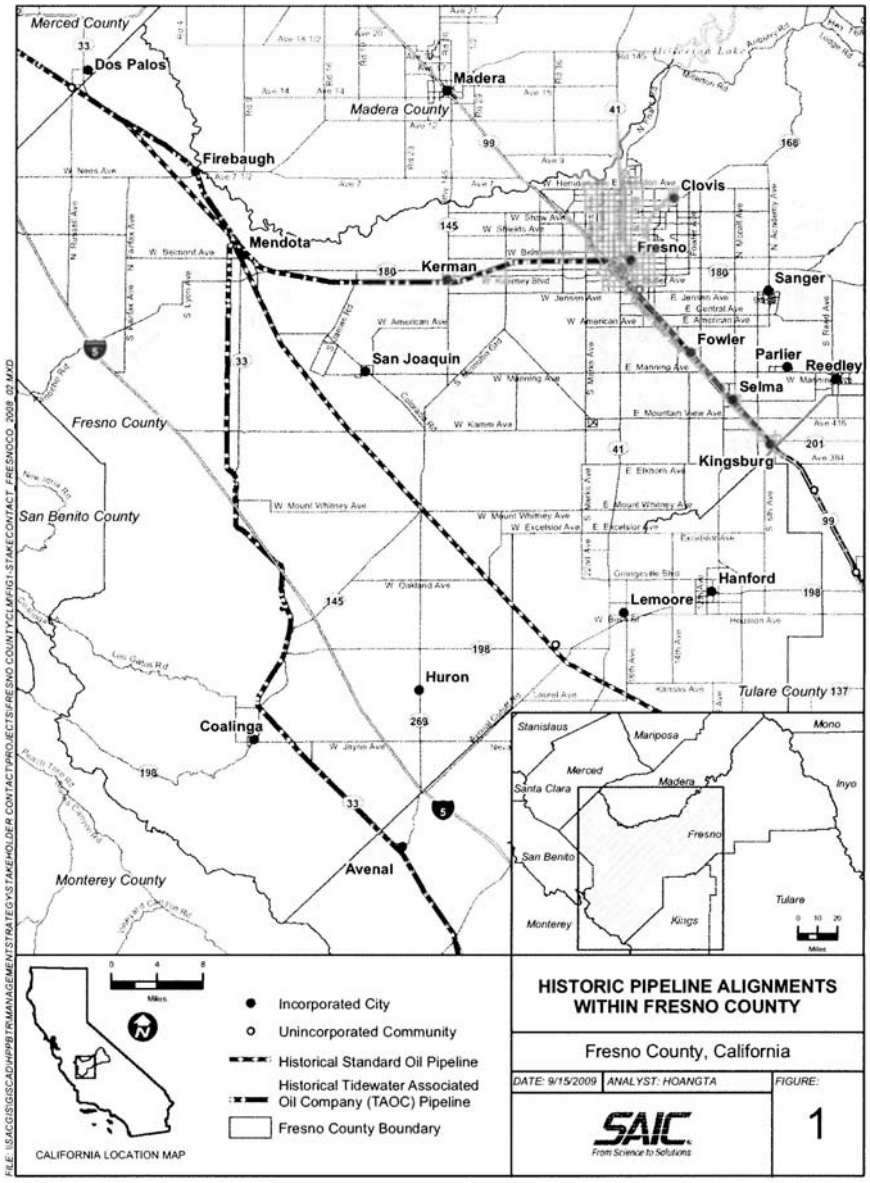
Merced County
Dos Palos
Madera
Madera County
Firebaugh
Clovis
Mendota
Fresno
Kerman
Sanger
Fowler
Parlier
Reedley
San Joaquin
Selma
Fresno County
Kingsburg
San Benito County
Hanford
Lemoore
Huron
Tulare County
Coalinga
Avenal
Monterey County
Stanislaus
Mariposa
Mono
Merced
Santa Clara
Madera
Inyo
Fresno
San Benito
Monterey
Kings
Tulare
Miles
Incorporated City
Unincorporated Community
Historical Standard Oil Pipeline
Historical Tidewater Associated Oil Company (TAOC) Pipeline
Fresno County Boundary
CALIFORNIA LOCATION MAP
HISTORIC PIPELINE ALIGNMENTS WITHIN FRESNO COUNTY
Fresno County, California
DATE: 9/15/2009
ANALYST: HOANGTA
FIGURE:
1
SAIC
From Science to Solutions