

## **Chapter 8            Monitoring Progress**

As the designated MPO for the Kern region, Kern COG monitors transportation plans, projects and programs for consistency with regional plans. Kern COG also monitors the performances of the transportation system. This performance monitoring is especially important to inform the planning process for future RTPs. Regional transportation problems cannot be solved until they are identified and measured.

Kern COG is required to prepare the RTP using performance-based measures that help public officials to better analyze transportation options and trade-offs. By examining performance of the existing system over time, the RTPA can monitor trends and identify regional transportation needs that may be considered in the RTP. Performance measurement helps to clarify the link between transportation decisions and eventual outcomes, thereby improving discussion of planning options and communication with the public. This may also help determine which improvements provide the best means for maximizing the system's performance within cost and other constraints.

Kern COG has developed performance measures (see chapter 6 – Environmental Justice) for the regional transportation system. In addition, new tools are being developed that will help Kern COG to monitor system performance over time. The Freeway Performance Measurement System (PeMS) is being developed by U.C. Berkeley in cooperation with Caltrans, which has the ability to measure and track freeway speeds, delay and reliability for the regional freeway system.

Transportation planning for the Kern region requires continually-improved information on the condition and use of the transportation system. Special reports are prepared periodically by Kern COG to demonstrate highway infrastructure conditions and to monitor the Kern region's overall traffic. The Highway Performance Monitoring System (HPMS) is a federally-mandated program designed by FHWA to assess the performance of the nation's highway system. Under the Clean Air Act, Kern COG and its member agencies are required to report periodically on vehicle miles traveled in each air basin to determine whether traffic growth is consistent with the projections on which the State Implementation Plans (SIPs) are based.

The following sections outline several significant tools used by Kern COG to monitor regional progress in advancing the Destination 2030 RTP.

### **Federal Transportation Improvement Program (FTIP)**

Kern COG is the designated Metropolitan Planning Organization (MPO) charged with developing and maintaining the Federal Transportation Improvement Program (FTIP). The FTIP is a financially constrained (i.e., budgeted) multi-

modal transportation planning program, developed by the MPO through its member agencies and in cooperation with state and federal agencies. The basic premise behind a TIP is that it is the incremental implementation of the long-range RTP. The TIP serves to present to federal funding agencies manageable components for the funding of long-range plans.

The FTIP is a compilation of project lists from the State Transportation Improvement Program (STIP), State Highway Operations and Protection Program (SHOPP) and other federal-aid programs. The FTIP is composed of two parts: (1) a priority list of projects and project segments to be carried out in a three-year period; and (2) a financial plan that demonstrates how the FTIP can be implemented. The financial plan is also required to indicate all public and private resources and financing techniques that are expected to carry out the program. TEA-21 further defined the FTIP process to focus on enhanced public and private agency participation.

### **Regional Transportation Improvement Program (RTIP)**

Every odd-numbered year, Kern COG prepares a Regional Transportation Improvement Program (RTIP), the short-term implementation tool for transportation goals described in this Destination 2030 RTP.

The RTIP provides a listing of projects proposed for implementation within the Kern region during its five-year period. Transportation projects are described in detail, with funding allocated by source and fiscal year. RTIP projects are categorized according to the transportation system to which they apply, i.e., State Highways, Local Highways/Expressways, or local streets and roads. Although eligible, transit projects are not included in the RTIP; rather, they are funded by other federal aid programs and included in the FTIP.

During each RTIP development cycle, Kern COG provides member agencies with adopted RTIP Policies and Procedures in order that Caltrans as well as local agencies can initiate project delivery. The Policies and Procedures manual defines the prioritized project candidates, which are then incorporated as the RTP's Capital Improvement Program (CIP) (see Section 4, Tables 4-1 and 4-2). Only after projects are included in the CIP can they then be funded and advanced as part of the RTIP.

### **TIP Database Management**

Kern COG maintains its own database in order to track project status. TIP data for the Kern region is entered directly into the California Transportation Improvement Program System (CTIPS), which allows an efficient and accurate record of current programming needs. The monitoring process compares project needs with current programming as it advances. When the need arises to modify

a project, or when delays are anticipated, Kern COG can recommend amendments to CTIPS.

### **Air Quality Conformity Monitoring**

Before federal approval of the RTP and TIP, the Federal Clean Air Act Amendments of 1990 require Kern COG to make a finding of the documents' conformity with the State Implementation Plan's air quality goals as established by the responsible air district. The Conformity Analysis for the Destination 2030 RTP and the 2004 FTIP are hereby included by reference; Resolution will be included as an Appendix in the Final Destination 2030 RTP. This analysis demonstrates that the criteria specified in the federal transportation conformity determination rule are satisfied by the TIP and RTP.

A new conformity finding must also be made anytime the TIP and/or RTP is adopted or significantly amended. Kern COG performs specific project monitoring of both the TIP and RTP project lists and monitors socioeconomic changes on an ongoing basis.

Summarized below are the applicable federal criteria for conformity determinations, and the results of the conformity assessment of the TIP and RTP. Additional information on air quality impacts can be found in the Destination 2030 RTP's environmental documentation.

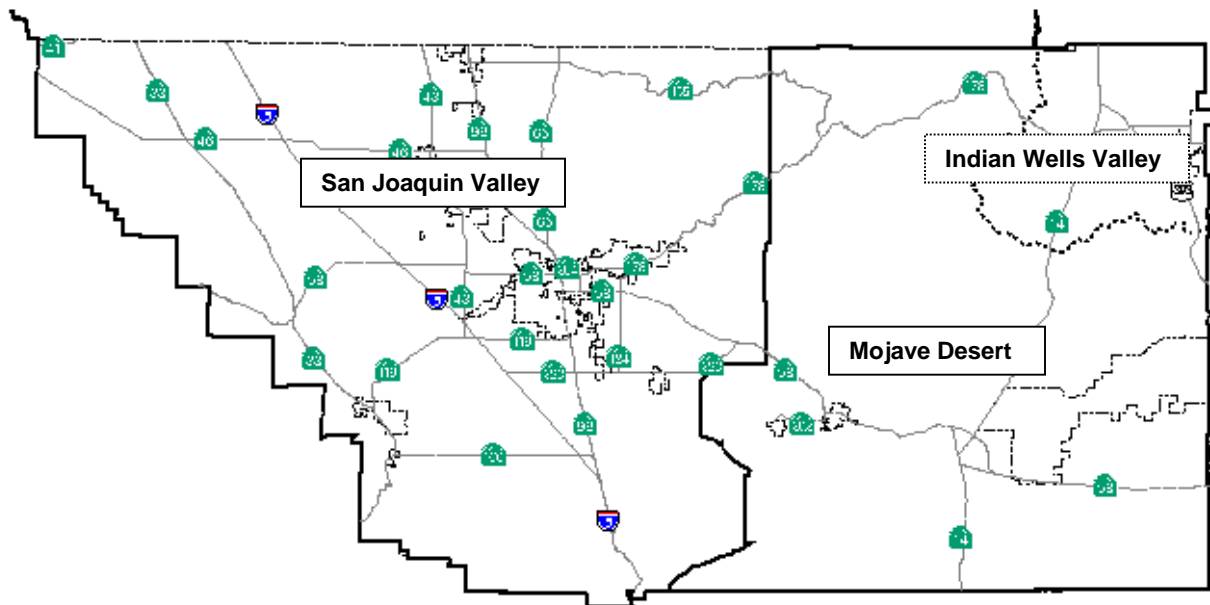
### **Conformity Requirements**

The federal transportation conformity rule (40 Code of Federal Regulations Parts 51 and 93) specifies criteria and procedures for transportation plans, programs, and projects, and their respective amendments. The transportation conformity rule and court opinions are summarized in Chapter 1 of the conformity analysis for the TIP and RTP.

The conformity rule applies nationwide to "all nonattainment and maintenance areas for transportation-related criteria pollutants for which the area is designated nonattainment or has a maintenance plan" (40 CFR 93.102). Currently, San Joaquin Valley (or portions thereof) is designated as nonattainment with respect to federal air quality standards for three criteria pollutants: carbon monoxide (CO), ozone, and particulate matter under ten microns in diameter (PM-10).

Eastern Kern County is also non-attainment or has a maintenance plan for two separate planning attainment areas or basins. These basins are defined by mountain ranges. Conformity for eastern Kern County includes analysis of existing and future air quality impacts for ozone in the Mojave Desert Air Basin (MDAB) and PM-10 in the Indian Wells Valley Planning Area (IWVPA). [Figure X](#) illustrates the air basins and districts for Kern County.

**FIGURE X– KERN COUNTY AIR QUALITY PLANNING AREAS**



Under the federal transportation conformity rule, the principal criteria for transportation plans' and programs' conformity determination are:

- 1) The TIP and RTP must pass an emissions budget test with a budget that has been found to be adequate by EPA for transportation conformity purposes, or an emissions reduction test;
- 2) The latest planning assumptions and emission models specified for use in conformity determinations must be employed;
- 3) The TIP and RTP must provide for the timely implementation of transportation control measures (TCMs) specified in the applicable air quality implementation plans; and
- 4) Consultation, which occurs at the beginning of the conformity analysis process, on the proposed models, associated methods, and assumptions for the upcoming analysis and the projects to be assessed, and at the end of the process, on the draft conformity analysis report.

### **Results of the Conformity Analysis**

A regional emissions analysis was conducted for the years 2005, 2008, 2010, 2013, 2020, and 2030 for each pollutant. All analyses were conducted using the latest planning assumptions and emissions models. Major conclusions of the 2004 Kern Council of Governments Conformity Analysis are:

### *Carbon Monoxide (CO) - San Joaquin Valley Portion of Kern County*

The total regional vehicle-related emissions associated with implementation of the TIP/RTP for the analysis years are projected to be less than the approved emissions budget established in the *1996 Carbon Monoxide Re-designation Request and Maintenance Plan*. The applicable conformity test for carbon monoxide is, therefore, satisfied.

### *Ozone - San Joaquin Valley and Mojave Desert Portions of Kern County*

The total regional vehicle-related emissions (VOC and NO<sub>x</sub>) associated with implementation of the TIP/RTP for all years tested are projected to be less than the adequate emissions budgets specified in the Amended 2002 and 2005 Ozone Rate of Progress Plan for the San Joaquin Valley, and less than budgets for the Mojave Desert Planning Area Attainment Maintenance Demonstration Plan. The conformity tests for ozone are, therefore, satisfied.

### *PM-10 - San Joaquin Valley and Indian Wells Valley Portions of Kern County*

The total regional vehicle-related emissions (PM-10 and NO<sub>x</sub>) associated with implementation of the TIP/RTP for all years tested are either: (1) projected to be less than the approved emissions budgets; or (2) less than the emission budgets using the approved PM-10 and NO<sub>x</sub> trading mechanism for transportation conformity purposes from the Amended 2003 PM-10 Plan for the San Joaquin Valley and the Indian Wells Valley Attainment Maintenance Demonstration Plan. The conformity tests for PM-10 are, therefore, satisfied.

The latest conformity determination did not require credit for emission reductions from the TCMs being implemented by Kern COG and its member agencies. However, to expedite the region's air quality attainment goals, every effort will be made to expedite implementation of TCMs identified in the TIP/RTP.

Federal standards for the 8 hr. ozone and PM-2.5 are currently being studied for future implementation. These standards will require a revised conformity determination.

## **California Clean Air Act Transportation Performance Standards**

The California Clean Air Act, passed in 1988, provides the basis for air quality planning and regulation independent of federal regulations. The Act specifically requires local air districts that are in violation of the California Ambient Air Quality Standard prepare attainment plans; the plans must identify air quality problems, causes, trends, and actions to be taken to attain and maintain California's air quality standards by the earliest practicable date. The implementation of TCMs in this RTP help to further progress toward attainment of these standards and

require that they continued and expanded even after all federal standards are met.

### **Highway Performance Monitoring System (HPMS)**

HPMS is used as a transportation monitoring and management tool to determine the allocation of federal aid funds, to assist in setting policies and to forecast future transportation needs as it analyzes the transportation system's length, condition and performance. Additionally, HPMS is used to provide data to the U.S. Environmental Protection Agency (EPA) to assist in monitoring air quality conformity, and its data are used in support of the Biennial Report to Congress On the Status of the Nation's Highways.

In California, the HPMS program is implemented annually by Caltrans. Kern COG's responsibility is to assist Caltrans in collecting data from local jurisdictions. Kern COG's responsibility also includes distribution, collection and administration of all HPMS survey packages in the Kern region.

To facilitate the HPMS program locally Kern COG is developing a regional traffic monitoring program. The program will provide regular traffic counts and speed survey across all jurisdictions in the region. The data collected will be used to assist in setting policies and to forecast future transportation needs. In addition, the data will be used to assist in monitoring air quality conformity.

### **Congestion Management Program (CMP)**

State Proposition 111, passed by voters in 1990, established a requirement that urbanized areas prepare and regularly update a Congestion Management Program (CMP). The purpose of the CMP is to: (1) monitor the performance of the transportation system; (2) develop programs to address near-term and long-term congestion; and (3) better integrate transportation and land use planning.

As the designated Congestion Management Agency, Kern COG must establish a system of roadways that will be monitored in relation to established level of service standards. The goal of the CMP is to identify a regional network and work toward maintenance of level of service D or better on the highways and roads that are identified in this network.

The CMP requirement was born of the realization that large capital projects alone cannot solve congestion problems and that local land use decisions contribute to roadway congestion. Kern COG, as the designated Congestion Management Agency (CMA) for the Kern region, adopts and updates the CMP.

Up to now, metropolitan Bakersfield and other urbanizing areas have been able to absorb increased traffic and have met these communities' transportation needs by adding some local roads, the Mojave Bypass and a few more buses.

But the Kern region can no longer assimilate additional traffic because of this continuing growth. Kern COG estimates that the population of metropolitan Bakersfield alone will increase by more than 60 percent. Congestion on arterial roadways and city streets will become intolerable unless significant new transportation facilities and services are provided.

The Congestion Management Program should stay in place in order to respond to the anticipated problems.

The Congestion Management Program, recertified in 2000 as Section 6.2 of the Regional Transportation Plan, is herein incorporated by reference.

### **Intergovernmental Review**

Under federal law, Kern COG is designated as the Areawide Clearinghouse for review of all submitted plans, change changes, projects and programs for consistency with adopted regional plans and policies. Regionally significant transportation projects reviewed for consistency with regional plans are defined as: construction or expansion of freeways; state highways; principal arterials; routes that provide primary access to major activity centers, such as amusement parks, regional shopping centers, military bases, airports, as well as potential high speed rail. Any project involving transportation improvements is reviewed to determine whether such improvements are included in the RTIP.

### **Transportation Planning Studies**

#### ***Roads to Ruin***

Kern COG prepared *Roads to Ruin: Transportation Funding Options for Kern County* in early 2002 to educate decision-makers and the public regarding the “dire straits” of Kern County’s roads and public transportation systems. As described in the document, Kern’s cities and the county are falling further behind in maintaining already beleaguered roads, while agencies such as Golden Empire Transit have no operating monies to meet growing demands for its services. In addition, the pace of new capital transportation projects cannot hope to meet anticipated needs under current funding projections.

*Roads to Ruin* discusses potential revenue sources available to assist Kern County’s growing transportation needs. Among the possibilities, voters could approve a countywide, special transportation-related sales tax ballot measure; a “special district” sales tax measure; a countywide parcel-based tax; a gasoline tax increase; a regional transportation impact fee; or a combination of these.

Regardless of which strategy appears the most viable, however, the consequences of continuing to rely solely on traditional funding are abundantly clear: the regional transportation system for Kern County will continue to

deteriorate on an increasingly rapid scale and will become increasingly congested. Drivers will pay more and wait longer to commute; public transportation operators will be unable to provide for the additional demands for service; and capital project construction will take too long to provide meaningful congestion relief.

The question no longer is whether additional transportation revenue is necessary to ensure a properly maintained and functioning transportation system, but rather will be the infrastructure last until new revenue arrives?

### **Metro Bakersfield Major Transportation Investment Strategy (MTIS)**

In 1997, Kern COG completed the *Metropolitan Bakersfield MTIS Action Plan*. The MTIS considered nine alternatives including various combinations of increased bus service, a cross-town freeway, a beltway system, super arterials, enhanced transportation system management (TSM) and passenger light rail service (found not be financially viable until sometime after 2015). The preferred option focused on growing the transit bus fleet to 200 vehicles, and building a crosstown freeway. Increased transit operations will someday provide a feeder network for future passenger rail options. The MTIS transit action plan includes additional bus transfer stations, bus automatic vehicle location (AVL) system and additional routes and increased headways. GET is deploying AVL, automated fare box and passenger count systems.

The 2001 Bakersfield System Study developed regional consensus on the road system improvements. The MTIS formed the Inter-agency Metropolitan Transportation Committee (IMTC) to monitor the progress of the MTIS action plan. The IMTC publishes an annual report on the action plan progress. The sixth annual report was published in November 2003, which included transportation projects under development in 2002-2003, including changes in legislation, planning and projects, as well as a "report card" identifying those transportation projects delivered in the second phase (2003-2006) of the Action Plan.

The MTIS Action Plan is structured to be responsive to future budgetary, political and economic changes affecting local, state and federal funding levels. The MTIS is modified and updated annually to accommodate changing priorities.

### **Regional Rural Transit Strategy**

Implementation of the Destination 2030 RTP requires changes in the operating practices of transit agencies. In spring 2002, Kern COG initiated a process to evaluate alternatives to its current network of rural transit services. Two interim reports were produced identifying existing services and a variety of service, administration, and coordination alternatives. Through refinement of the alternatives, the final report outlined a series of recommended steps for Kern

County's transit providers, describing a process for enhanced coordination as well as the potential for eventual consolidation of services within the County.

### **Eastern Sierra Public Transportation Plan**

In early 2004, Kern COG in partnership with Inyo and Mono Counties, hired a consultant to prepare an Eastern Sierra Public Transportation Plan. Key objectives of this study are to identify transportation alternatives and recommend solutions for: (1) enhancing the current lifeline intercity services available throughout the Eastern Sierra; (2) improving intercity connections and providing new services to expand the transportation alternatives in the Eastern Sierra; (3) coordinating transportation services by existing providers, social service agencies, and private operators; and (4) determining the feasibility of passenger rail service in the Eastern Sierra.

Some of the critical transportation challenges in the Eastern Sierra include finding solutions to address the needs of current and potential transit markets, such as: (1) senior citizens who live in remote locations and have difficulty accessing transit; (2) intercity transit that does not operate frequently enough to provide realistic transportation options; (3) Greyhound's departure in 2000 that left a void in public transportation options; (4) economic development opportunities; and (5) challenge of providing information and marketing for transit service.

Kern COG anticipates the Eastern Sierra Public Transportation Plan to be completed by November 2004.

### **Traffic Model Forecasting**

Kern COG maintains and runs a regional travel demand forecast model for the Kern County region. The model is used to forecast the demand for future transportation infrastructure by predicting future travel patterns based on factors including locally approved general plan land use entitlements, input from local planning departments on socio-economic growth areas, and state and federal data sources. Some of the forecast input variables include populations, households, employment, school enrollment, income, traffic counts, speeds, intersection configuration, existing and planned transportation networks, etc. These variables are maintained for approximately 1000 transportation analysis zones covering the 8,200 square mile County. One of the primary purposes of the model is to demonstrate conformity with the Federal Clean Air Act goals requiring substantial reductions from all pollution sources, including air pollutants from the transportation sector called mobile source emissions. Travel Demand Forecast Modeling is also used in support of the RTP/TIP processes, Congestion Management System/Plan (CMP), and numerous environmental documents prepared for locally identified projects throughout the region. The Kern COG Regional Transportation Model provides a savings to its member agencies that

without the regional model, would be required to maintain duplicate, overlapping, and potentially conflicting transportation forecasts.

Oversight for the model is provided by the Kern Regional Transportation Modeling Committee. The committee operates under an MOU between the City of Bakersfield, Caltrans District 6, the County of Kern and Kern COG.

Kern COG and the Kern Regional Transportation Modeling Committee have adopted the following policies and procedures for maintaining the regional transportation model used in air quality and congestion management planning:

1. Model Base Year Validation – Network-based travel models must be validated against observed counts for a base year from which future projections will be made:
  - a. Observed counts used in base year validation shall not be more than 10 years prior to the date of a conformity determination.
  - b. Base year validation shall take place after the release of the decennial Federal Bureau of Transportation Statistics, Census Transportation Planning Package (CTPP), which is approximately 4 years after the date of the most recent decennial Census.
  - c. Revalidations prior to release of the next CTPP should be spaced a minimum of three years apart to allow conformity review agencies time to complete state and federal review processes and develop air quality budgets using the modeling results. A minimum of three years between revalidations is also needed to allow responsible state and federal agencies to complete their review of large environmental documents without major changes to transportation circulation modeling results.
2. Land Use Data – General Plan land use capacity data or “Build-out capacity” is used to distribute the forecasted County totals, and may be updated as new information becomes available, and is revised in regular consultation with local planning departments.
3. Socio-Economic Forecast Data – Countywide forecasts for households, employment and other socio-economic data shall be updated not less than 3 years from the time of the Socio-economic forecast. A minimum of three years between Countywide forecast revisions is needed to allow responsible state and federal agencies time to complete their review of large environmental documents without major changes to transportation circulation modeling results. Redistribution of forecasts for sub county areas may be made on an as needed basis to better reflect existing general plan land entitlements as long as Countywide forecast totals remain unchanged.
4. Highway Performance Monitoring System (HPMS) data collection and reporting shall be performed annually in the Spring and submitted to the California Department of Transportation prior to June 15.
5. Network Updates – Added as needed to model existing, planned and proposed future transportation facilities.
6. Transportation Analysis Zone Updates – Added as needed in response to additional network to allow appropriate loading of trips on the network.
7. Local Scenario Modeling – Due to the scale and complexity of a countywide model, not all network links can be validated and calibrated adequately. For links that are not calibrated, an adjustment factor may be applied to future years based on how far off the model assigns trips in comparison to the actual count. In addition, alternative models may be developed for community and site specific analysis on behalf of a member agency. Local scenario models may not be used for determining air quality conformity of a project, or FTIP/RTIP and RTP project rankings.