

## CHAPTER 10

### AIR QUALITY

#### I. OVERVIEW

The San Joaquin Valley Air Basin (SJVAB) experiences some of the poorest air quality in the nation. The Valley's long and narrow 250-mile bowl shape collects and holds emissions from vehicles, industry, agriculture, and various other sources. The long hot summers, ideal for agriculture production and stagnant foggy winters, contribute to the region's ability to produce and retain harmful air pollutants. The San Joaquin Valley Air Pollution Control District (SJVAPCD) was created as an agency with authority to regulate sources of air pollution and develop plans that will achieve and maintain air quality standards.

The SJVAB exceeds many of the health-based standards set by both the United States Environmental Protection Agency (EPA) and California's Air Resources Board (CARB) for criteria pollutants such as ozone, carbon monoxide, nitrogen dioxide, and particulate matter 10 microns or less (PM 10) and particulate matter 2.5 microns or less (PM 2.5). Specifically, the Valley is designated as a nonattainment area for meeting federal and state 1-hour and 8-hour ground level ozone and nonattainment area for PM 2.5. Announced in October 2006 by the U.S. EPA, the previous status of Serious nonattainment for PM-10 has improved to the attainment level for the standard. The SJVAB will continue to work towards achieving and maintaining the attainment status of all criteria pollutants.

For designated areas that do not meet established air quality standards including the SJVAB, the 1990 Federal Clean Air Act Amendments (FCAAA) and the California Clean Air Act (CCAA) of 1988 required the implementation of transportation control measures (TCM). The goal of a TCM is to bring a region into compliance with state and federal air quality standards. TCMs are defined as any strategy to reduce vehicle trips, vehicle use, vehicle miles traveled, vehicle idling or traffic congestion for the purpose of reducing motor vehicle emissions. The remainder of this section will be devoted to TCMs that the San Joaquin Valley has identified.

#### II. ASSUMPTIONS AND INVENTORIES

The Regional Transportation Plan must provide for the expeditious implementation of TCMs included in the State Implementation Plan (SIP). Opportunities to support federal and statewide goals concerning air quality in transportation plans must also be identified. As a Regional Transportation Planning Agency (RTPA) and Metropolitan Planning Organization (MPO), KCAG will continue to fulfill its responsibility in developing, funding, and implementing transportation control strategies that will collectively improve the Valley's air.

##### A. TRANSPORTATION CONTROL MEASURES

The FCAAA defines a TCM as including, but not limited to: programs for improved public transit; high occupancy vehicle lanes; employer-based transportation management plans; trip reduction ordinances; traffic flow improvements; park-and-ride lots; programs to restrict vehicle use during peak periods; rideshare services; bicycle and pedestrian programs; programs to control vehicle idling; flexible work schedules; programs and ordinances to facilitate non-automobile travel; and programs to encourage the voluntary removal of pre-1980 light duty vehicles and trucks. Best available control measures (BACM) are an example of a transportation control measure.

B. AIR QUALITY ATTAINMENT PLANS

1. 1979 Kings County Air Quality Plan

Following the Federal Clean Air Act Amendments of 1977, the Kings County Air Pollution Control Board prepared and adopted the “Nonattainment Area Plan for Ozone”. This air quality plan made several findings and requests, and recommended several actions in an attempt to meet attainment by 1982. No specific TCMs were identified beyond the request to the California Legislature to authorize and fund the implementation of an annual motor vehicle inspection and maintenance program in Kings County.

Since attainment was not expected before the December 31, 1982 deadline, the air quality plan identified additional measures necessary for attainment before December 31, 1987. The air quality plan recommended nine actions, including the analysis of emissions and the development of TCMs to reduce reactive organic gas (ROG) emissions.

2. 1991 Air Quality Attainment Plan

The SJVAPCD prepared and adopted the “1991 Air Quality Attainment Plan” to satisfy the requirements of the CCAA to reach ozone attainment standards by December 31, 1997. The strategy outlined in this Plan included all feasible control measures to reduce emissions and specifically included TCMs to address mobile source emissions.

This Plan identified the TCMs recommended for implementation by applicable areas, including: traffic flow improvements; public transit; passenger rail and support facilities; rideshare; park-and-ride lots; bicycling programs; trip reduction programs; parking management programs; telecommunications; alternative work schedules; alternative fuels; and rapid rail and support facilities.

3. San Joaquin Valley Transportation Control Measure Program

The TCMs identified in the “1991 Air Quality Attainment Plan” were further evaluated for their effectiveness, implementation, funding, monitoring, and enforcement with the preparation of the “San Joaquin Valley Transportation Control Measure Program”. This document was prepared for the SJVAPCD and the eight regional transportation planning agencies in the Valley to provide guidance for jurisdictions to develop and implement local TCMs.

4. Rate of Progress Plans

As required by the FCAAA, the SJVAPCD adopted the “1993 Rate of Progress Plan” to provide a base year inventory of volatile organic compound (VOC) emissions and to show how the District would achieve a 15% reduction in these emissions between 1990 and 1996 through the adoption of rules and contingency measures. The “1993 Rate of Progress Plan” included as contingency measures, Rule 9001 - Commute Based Trip Reduction and the Auto Buy-Back program.

The SJVAPCD was also required to prepare and submit a “Post 1996 Rate of Progress Plan” to demonstrate how the District would achieve a 9% reduction in VOC emissions between 1996 and 1999. Applicable TCMs included in the San Joaquin Valley Transportation Control Measure Program were identified in the “Post 1996 Rate of Progress Plan” as a means to meet this mandate.

5. Ozone Standards and Attainment Demonstration Plans

Ozone (O<sub>3</sub>) forms from the reaction between nitrogen oxides (NO<sub>x</sub>) and volatile organic compounds (VOCs) in the presence of sunlight. Cars, trucks, buses, engines, industries, power plants and products such as solvents and paints are among the major manmade sources of ozone-forming emissions. Ozone can inflame the airways, damaging the respiratory system with symptoms such as chest pain, coughing, wheezing and shortness of breath. The groups considered most vulnerable to ozone are children, people with asthma and other lung diseases, older adults, and adults work outside.

1-Hour Ozone

The 1990 Federal Clean Air Act Amendments required the SJVAPCD to develop a plan to show how it would achieve attainment of the federal ozone standard by November 15, 1999. The "Ozone Attainment Demonstration Plan" was prepared and adopted in 1994. The plan showed how it would demonstrate attainment and included TCMs as Rules 9001 - Commute Based Trip Reduction; Rule 9010 - Fleet Inventory; and Rule 9011 - Light and Medium Duty Low Emission Fleet Vehicles, in addition to contingency measures identified as TCM projects already programmed and funded by the RTPAs.

The San Joaquin Valley Basin (SJVAB) did not attain the federal air quality standard for ozone by November 15, 1999. As a result, in November 2001, the Environmental Protection Agency (USEPA) reclassified the SJVAB from Serious to Severe. The USEPA at this time also required implementation of six emission control measures from the 1994 Ozone Plan and established a May 31, 2002 deadline for a Severe ozone nonattainment plan. This plan was to document attainment of the federal 1-hour ozone standard by November 15, 2005.

The SJVAPCD was not able to demonstrate the federal 1-hour ozone standard by the May 2002 target. In October 2002, the USEPA issued Severe area requirements which included the outstanding 1-hour ozone attainment plan by November 15, 2005, creditable emission reductions, Reasonably Available Control Technology for lime kilns, an emissions inventory, and contingency measures. In addition, the EPA's 2002 action triggered both 18- and 24-month timetables or "clocks" for imposing emissions and highway funding sanctions, respectively. A Federal Implementation Plan was also to be prepared within a 24-month period from October 2002. The 1-hour ozone attainment was required to be submitted by March 18, 2004. Failure to put forth this document by the extension would trigger sanctions. All of the USEPA requirements were submitted in 2003, except the plan demonstrating the federal 1-hour ozone standard.

In preparation for the federal 1-hour ozone plan, computer modeling illustrated that reductions from the SJVAB alone would not be enough to attain the ozone standard. For the SJVAB to show attainment, the SJVAPCD and CARB would have to implement rules for emission reductions. As many of CARB's upcoming rules were scheduled for enactment after November 15, 2005, other options had to be explored. On December 18, 2003 after much research and discussion with applicable parties, USEPA was asked by the SJVAPCD and CARB to reclassify the SJVAB from Severe to Extreme nonattainment for the federal 1-hour ozone standard. This designation reflects a more serious air quality problem for the ozone health-based standard, but allows for more time to demonstrate attainment.

The reclassification to Extreme nonattainment for the federal 1-hour ozone standard became final on May 17, 2004. The attainment date for the SJVAB is now November 15, 2010. Any previously imposed sanctions or the Federal Implementation Plan have been superseded by the Extreme nonattainment classification. The "Extreme Ozone Attainment Demonstration Plan" was adopted on October 8, 2004 and amended in October 2005.

On May 6, 2014, the SJVAPCD submitted a formal request that the USEPA determine that the SJVAB has attained the federal 1-hour ozone standard. Per federal requirements, the SJVAPCD's submittal includes a clean data finding and a finding that attainment is due to permanent and enforceable emissions reductions. For the first time in recorded history, in 2013, the SJVAB had zero violations of the 1-hour ozone standard established by USEPA under the federal Clean Air Act. The SJVAB now meets the 1-hour ozone standard based on the most recent three year period air monitoring data (2011-2013). While not approved by the USEPA, the SJVAPCD has formally made the request.

### 8-Hour Ozone

#### 2007 Plan for the 1997 8-hour Ozone Standard

On April 15, 2004, the EPA designated and classified the SJVAB as Serious nonattainment for the federal 8-hour ozone standard. As of June 15, 2004, the Valley officially became a Serious nonattainment area and had until June 15, 2013 to show that it can achieve the 8-hour ozone standard. The initial 8-hour ozone plan for the Valley, *2007 Ozone Plan*, was due to EPA by June 15, 2007. This plan is the first step in the Valley's path towards attainment to be followed by subsequent plans, rules, and programs that reduce emission to bring the area into attainment.

While many areas of the SJVAB currently meet this standard, several areas, including Arvin and northwest Fresno, would not reach attainment by June 2013. Based on the evidence, it was necessary to reclassify the SJVAB to an Extreme nonattainment classification. On April 30, 2007 the governing board of the SJVAPCD approved an 8-hour ozone plan that would extend the attainment date from June 15, 2013 to June 15, 2024. The SJVAB must reduce 75% of nitrogen oxides, which come from such sources as motor vehicles. Under an Extreme classification, an 8-hour ozone plan can take advantage of future advancements in technology in regards to emission reduction.

The SJV was reclassified from a Serious nonattainment area for the 8-hour ozone standard to Extreme effective June 4, 2010. The SIP has identified subarea budgets for each MPO in the nonattainment area. For this Conformity Analysis, the SJV will continue to conduct determinations for subarea emission budgets as established in the applicable implementation plan. The 2007 Ozone Plan (as revised in 2011) was approved by EPA on March 1, 2012 (effective April 30, 2012).

#### 2016 Plan for the 2008 8-hour Ozone Standard

On March 12, 2008, EPA revised the primary and secondary 8-hour ozone standard at 75 ppb. Effective July 20, 2012, EPA designated the SJVAB as Extreme nonattainment area of the 2008 8-hour ozone. The *2016 Ozone Plan*, for the 2008 standard is due on July 20, 2016, and the attainment date is December 31, 2013 using data from calendar years 2029, 2030, and 2031.

The *2016 Ozone Plan* builds upon the SJV Air Pollution Control District's 1-hour ozone, 8-hour zone and particulate matter (PM) strategies and satisfies Federal Clean Air Act (CAA) requirements under EPA's 2008 8-hour ozone standard. The *2016 Ozone Plan* was adopted by the District in June 2016 and subsequently approved by the Air Resource Board (ARB) in July 2016.

On October 1, 2015, EPA strengthened the 8-hour ozone standard from 75 ppb to 70 ppb, based on extensive scientific evidence about ozone's effects on public health and welfare. This updated ozone standard will essentially eliminate children's exposure to ozone at 70 ppb. The designation and State Implementation Plan Requirements Rule for 2015 8-hour ozone standard have not published yet. However, EPA anticipates designation areas in late 2017, and nonattainment areas will have from 2020 to 2037 to meet the standards.

The District will continue to develop new attainment plans to address the latest federal ozone standards. In future plans, significant additional emission reductions are expected, particularly with respect to mobile sources under ARB and EPA jurisdiction that make up over 85% of remaining emissions in the Valley.

6. PM-10 Attainment Demonstration and Maintenance plan

PM-10 refers to particulate matters with diameter less than 10 microns – about 1/7th the thickness of the human hair. These particles are small enough to be inhaled into the deepest parts of the lung that threatens both our health and the environment.

PM-10 Nonattainment Area Plan of 1991

The FCAAA classified the San Joaquin Valley as a Moderate PM-10 nonattainment area, thus requiring the adoption and implementation of a "PM-10 Nonattainment Area Plan" to reach attainment by 1994.

On-road mobile sources of emissions do not contribute greatly to the problem of primary PM-10. However, mobile sources do contribute to the oxides of nitrogen (NOx) and reactive organic gases (ROG), which are considered to be significant precursors affecting the creation of PM-10. Therefore, the implementation of TCMs to reduce VMT and increase vehicle occupancy can aid in the attainment of PM-10 standards.

The SJVAPCD submitted a plan that contained reasonable available control measures as required for Moderate nonattainment areas, but was unable to demonstrate attainment by the December 31, 1994 deadline. Due to the magnitude of the PM-10 problem, it was determined that SJVAB could not feasibly achieve the standard, and therefore was reclassified as a Serious nonattainment area effective February 8, 1993.

1994 Serious Area PM-10 Plan

Classification as a Serious nonattainment area mandated the SJVAPCD to adopt a plan that contains more stringent strategies and rules which would enable attainment of the PM-10 standard by December 31, 2001. Specifically the plan was to include implementable best available control measures (BACM).

The SJVAPCD adopted the “1994 Serious Area PM-10 Plan” on September 13, 1994 which identified the only TCM considered to provide measurable benefits for PM-10 reductions as the *Trip Reduction Ordinance*. Individual TCMs would provide insignificant reductions in PM-10 emissions. Since several TCMs are included as part of any trip reduction program, their cumulative effect would produce favorable results.

#### PM-10 Attainment Demonstration Plan

Because the SJVAPCD could not show that the air basin could reach attainment by 2001, a “PM-10 Attainment Demonstration Plan” was prepared to describe existing and future efforts pursued by the District to attain the standard by December 31, 2006. The plan was finally submitted by the SJVAPCD on May 15, 1997 and requested an extension until 2006 to attain the 24- hour standard at all monitoring sites.

The EPA indicated that it intended to disapprove this Plan, because it did not include an adequate BACM demonstration and a “most stringent measures” demonstration required for an extension. Realizing that there was insufficient time to correct the deficiencies, the SJVAPCD withdrew the Plan.

#### 2003 PM-10 Plan

Because of the failure to submit the previously required PM-10 Plan, the SJVAPCD adopted the “2003 PM-10 Plan” on June 19, 2003 and approved amendments on December 18, 2003. The EPA approved the plan effective June 25, 2004 under the condition that the SJVAPCD would submit a SIP revision. This was required to evaluate if the identified emission reductions in the 2003 Plan would be enough to obtain the air quality standards for PM 10.

#### 2006 PM-10 Plan

The “2006 PM-10 Plan” includes the SIP revision as stipulated for approval of the “2003 PM-10 Plan”. The SIP revision is to specifically include from the *California Regional Particulate Air Quality Study* an inventory, the latest technical information, monitoring data, and modeling evaluation. The SJVAPCD was to submit the plan to the EPA by March 31, 2006. The EPA has six months to determine if the plan was complete and one year to find the plan in compliance within finding it complete. The plan was adopted by the SJVAPCD on February 16, 2006.

In May of 2006, it was requested by California that the EPA consider the SJVAB in attainment of the PM-10 standards. This request of attainment was based on the air quality data from the years 2003-2005. The EPA concluded on October 17, 2006 that indeed the Valley had reached attainment and that the related contingency measures would be suspended. The SJVAB’s maintenance plan was approved by the EPA and subsequently published in the November 12, 2008 Federal Register.

California Air Resources Board and the San Joaquin Valley Air Pollution Control District will continue with their commitment to keep the SJVAB in attainment of the PM-10 standard and work towards the attainment of all other identified air quality standards.

2007 PM-10 Maintenance Plan

The 2007 PM-10 Maintenance Plan was approved (with minor technical corrections to the conformity budgets) by EPA on November 12, 2008, which contains motor vehicle emission budgets for PM-10 and NO<sub>x</sub>, as well as a trading mechanism. Motor vehicle emission budgets are established based on average annual daily emissions. The motor vehicle emissions budget for PM-10 includes regional reentrained dust from travel on paved roads, vehicular exhaust, travel on unpaved roads, and road construction.

7. PM-2.5 Standards and Attainment Demonstration Plans

PM-2.5 refers to tiny particles or droplets in the air that are two and one half microns or less in width. Particles in this size are able to travel deeply into respiratory tract, reaching the lungs. Emission of PM-2.5 from road vehicles is one of major direct sources. PM-2.5 can also be formed from the chemical reactions of gases.

2008 PM-2.5 Plan and 2015 PM-2.5 Plan for the 1997 PM-2.5 Standard

EPA established the first national air quality standards for the fine fraction of particulates, PM-2.5, in July 1997 and designated the Valley as nonattainment for the 1997 standard based on ambient air quality data collected from 2001-2003. The 1997 standard has two limits of attainment: an annual PM-2.5 standard at 15  $\mu\text{g}/\text{m}^3$  and the 24-hour PM-2.5 standard at 65  $\mu\text{g}/\text{m}^3$ . During the process of developing the 2008 PM-2.5 Plan, the Valley was already projected to attain the 1997 24-hour standard based on the air quality data collected from 2004-2006. Therefore, the District focused on the demonstration of how the Valley will attain the 1997 PM-2.5 standard in the 2008 PM-2.5 Plan.

The District's Governing Board adopted the 2008 PM-2.5 Plan to address the 1997 annual PM-2.5 standard and directed staff to forward the adopted 2008 PM-2.5 Plan to ARB for approval and submittal to EPA. The 2008 PM-2.5 Plan was approved by EPA in November 2011, effective January 2012.

However, a court ruling in 2013 found that EPA erred in implementing the federal PM-2.5 standard pursuant solely to the general implementation provisions of Subpart 1 without also considering the particulate matter-specific provisions of Subpart 4, which requires a nonattainment area classification system and contains requirements specific to particulate matters. As a result, in June 2014, EPA classified the Valley and all other PM-2.5 nonattainment areas as a Moderate nonattainment area under Subpart 4, and required the District to submit additional documentation to fulfill all Subpart 4 requirements.

The District submitted an official request to EPA for reclassification from Moderate nonattainment to Serious nonattainment, with a demonstration of impracticability to attain the 1997 PM-2.5 standard by the April 5, 2015 deadline. The demonstration explained the situation that the Valley was on track to attain the 1997 PM-2.5 standard until the extreme weather conditions over the winter of 2013-2014 overwhelmed emissions controls and led to abnormally high PM-2.5, which made the attainment of the 1997 annual PM-2.5 standard impractical based on 2012-2014 data. EPA evaluated the air quality data provided by the District and proposed the action of reclassification in February 2015. EPA finalized the Valley's reclassification to Serious Nonattainment in April 2015, effective May 2015, and thus extended the attainment date to no later than December 2015.

Due to the extreme drought, stagnation, strong inversions, and historically dry conditions experienced over the winter of 2013-2014, which made the attainment deadline of December 2015 impractical for the Valley to reach, the District requested a one-time extension of the attainment deadline for the 24-hour PM-2.5 standard to 2018 and the annual PM-2.5 standard to 2020.

*2012 PM-2.5 Plan for the 2006 PM-2.5 Standard*

EPA revised the 24-hour average PM-2.5 standard to 35  $\mu\text{g}/\text{m}^3$  in October 2006 and initially designated the Valley as nonattainment area for the 2006 PM-2.5 standard in 2009, effective December 2009. The due date for the attainment demonstration plan is December 14, 2012. Similarly, due to the court ruling in 2013 that EPA did not consider the particulate matter-specific provisions of Subpart 4, in June 2014, EPA classified the Valley as Moderate nonattainment area under Subpart 4 for the 2006 PM-2.5 standard.

Subsequently, EPA reclassified the Valley nonattainment area from Moderate nonattainment to Serious nonattainment for the 2006 PM-2.5 standard based on a determination that the area cannot practicably attain the 2006 PM-2.5 standard by the Moderate area attainment date of December 31, 2015. Within 18 months of this reclassification, the State must submit a Serious area plan to demonstrate the attainment of the 2006 PM-2.5 standard in the Valley as expeditiously as practicable as and no later than December 31, 2019. The District's Governing Board approved the 2012 PM-2.5 Plan for the 2006 PM-2.5 standard in December 2012. The California Air Resources Board (ARB) approved the District's 2012 PM-2.5 Plan at a public hearing in January 2013.

*2016 Moderate Area Plan for the 2012 PM 2.5 Standard*

In June 2012, EPA revised the national annual average of PM-2.5 standard to 12  $\mu\text{g}/\text{m}^3$ . In April 2015, EPA designated the Valley as a Moderate nonattainment area for the 2012 PM-2.5 standards within an initial attainment date of December 2021. The 2016 Moderate Area Plan for the 2012 PM-2.5 Standard was developed to address the latest PM-2.5 standard and satisfy Subpart 1 and Subpart 4 requirements for a Moderate nonattainment area. The 2016 Plan includes an impracticability demonstration and a request that the Valley be classified as a Serious nonattainment area, which will establish a new attainment deadline of December 2025.

In October 2016, the CARB conducted a public meeting to consider the District's 2016 PM-2.5 Plan. ARB staff is in the process of conducting several workshops in the Valley to assess opportunities for further reductions from stationary and mobile sources. ARB staff will report back to the Board with recommendations and next steps for continued strategy development.

*2017 PM Plans*

The District is in the process of developing an attainment strategy to address multiple PM-2.5 standards (1997, 2006, and 2012 PM-2.5 standards) and a plan to demonstrate maintenance of the 1987 PM-10 standard as required under the Federal Clean Air Act.



III. ACTION ELEMENT

A. KINGS COUNTY TCM PROGRAMS

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

1. Traffic Flow Improvements

Traffic flow improvements will ease congestion and reduce pollutants. New signals, signal synchronization, addition of turn lanes, smoother railroad crossings, and construction of interchanges are being carried out to facilitate smooth, uncongested traffic flow. The process of widening road shoulders will also decrease the amount of dust in the air that cars and trucks produce as they travel on roads.

Local jurisdictions have sought to improve traffic operating conditions by replacing four-way stop signs with traffic-actuated signals or by upgrading existing traffic signals. Other improvements that have been implemented include adding turn lanes and pockets, median barriers, and other channelization techniques.

Actions to improve vehicle traffic flow should be carefully evaluated because they may become counterproductive to other methods in reducing air pollution by encouraging more VMT. Traffic flow improvements should be accompanied by actions to improve and encourage the use of transit and rideshare services.

2. Public Transit

Public transit is an alternative to the private automobile to reduce pollution. It is also an essential service that provides transportation to those of low mobility so that they may be able to take advantage of what the county offers in commercial, business, medical, educational, employment, and social/recreational opportunities. Increasing the ridership of local transit systems to reduce the use of single-occupant autos can be accomplished through monitoring transit routes and making changes where indications suggest they be made: adding routes, providing better passenger information systems, increasing marketing efforts, and integrating transit modes for improved convenience.

Public transit improvements by the Kings Area Rural Transit (KART) and Corcoran Area Transit (CAT) systems have been implemented and are ongoing as a result of increased ridership from past successful improvements. Expanded fixed routes, changes in route schedules, addition of commuter routes, acquisition of newer and larger buses, and the placement of passenger amenities at bus stops have all made a positive impact on ridership. Both the Kings County Area Public Transit Agency (KCAPTA) and the city of Corcoran have integrated multimodal transit facilities with Amtrak service to provide centralized transportation services, thereby encouraging public use of transit while reducing potential air pollutants in the region. The city of Lemoore completed the construction of a transit center in 2004, located in the central business district next to the SJVRR tracks, which also serves as a multipurpose facility where community events are often held.

Contributions from the private sector can be utilized to reduce government cost in providing public transit. While new developments have traditionally provided parking facilities to accommodate vehicle trips, such developments have also provided facilities that encourage and accommodate transit as a means of mitigating increased vehicle traffic produced by their development.

3. Rideshare Programs

Ridesharing is an alternative and compliment to local public transit for reducing single-occupant vehicle travel. Ridesharing reduces air pollution, automobile congestion, fuel consumption, and the need for additional road and parking capacity by increasing the vehicle occupancy rate.

Kings County residents can utilize the convenient online ridesharing services through either the Valley Rides or CalVans services. These programs provide computerized commuter matching, employer outreach, and public awareness through marketing efforts. Signs along major highways provide the toll-free phone number for commuters to request rideshare information. KCAG staff takes part in various special events to promote ridesharing and is involved in committees to develop commuter options. More information can be found online at [www.valleyrides.com](http://www.valleyrides.com) or [www.calvans.org](http://www.calvans.org).

Kings County has implemented an “Emergency Ride Home Program” to encourage ridesharing by its employees. Often times people are not willing to carpool for fear that they could be stranded at their workplace and be unable to return home for an emergency. This program offers a sense of security to potential rideshare participants by offering a choice of options for a return home for unexpected emergencies.

Employer-sponsored vanpools with tax incentives for vehicle purchase is another form of ridesharing. Local governments could make employers aware of these programs through their local development regulations. Where a large employer proposes a new plant or land use, part of the traffic and circulation concerns could be addressed through ridesharing and vanpool programs supported by the employer. KCAPTA implemented a vanpool program in 2001 that grew to over 200 employer vans and 150 farm worker vans in California and neighboring states, now known as the CalVans program and operated by the California Vanpool Authority.

Two studies, the South Valley Rideshare Study and the San Joaquin Valley Express Transit Study, were completed in 2009 to evaluate future transit needs and better coordinate vanpooling efforts throughout the San Joaquin Valley. These studies pointed to vanpooling as a means of reducing greenhouse gas emissions and increasing inter-county transportation choices with lower operating costs than traditional transit options.

4. California Vanpool Authority (CalVans)

As a result of the rideshare studies and the continued popularity of vanpooling, a new joint powers agency (JPA), the California Vanpool Authority (CalVans), was formed with several councils of government (COG) throughout the Valley and the state, creating a regional agency for vanpool services. CalVans started by providing vanpool services to transport workers from throughout the Central Valley to job sites. Most of the job sites of vanpool participants include the California State prisons in Avenal, Corcoran, Kern County, and Coalinga. However, due to the success of the program, it has now extended beyond the San Joaquin Valley and into several California counties. Currently, the following agencies are members of the JPA for CalVans:

- Association of Monterey Bay Area Governments
- Fresno Council of Governments
- Imperial County Transportation Commission

- Kern Council of Governments
- Kings County Association of Governments
- Madera County Transportation Commission
- Merced County Association of Governments
- Riverside County Transportation Commission
- San Bernardino County Transportation Authority
- San Joaquin Council of Governments
- Santa Barbara County Association of Governments
- Stanislaus Council of Governments
- Tulare County Association of Governments
- Ventura County Transportation Commission

5. Bicycle and Pedestrian Facilities

The use of bicycle and walk mode can be promoted for commuter and recreational travel that has the primary benefits of reducing traffic congestion and providing a non-polluting transportation mode.

Bicycle facilities in the unincorporated county area consist mainly of bike routes on a shared-use basis with automobiles. Within the urban areas, Class II (Bike Lane) facilities have been provided, along with shared-use routes. Generally, road resurfacing improvements and the provision of wider road shoulders offer a good riding surface that benefits both the motorist and the cyclist.

The Kings County Bicyclists is a local bicycling group organized to encourage the implementation of bicycle facilities in Kings County. With their assistance, bicycle plans have been prepared for the region that guide the development and installation of bicycle facilities throughout the county and each city.

Since bicycles may share the roadway with automobiles, safety is imperative in bicycle use. Promoting bicycle safety is generally carried out by local police departments within Kings County. For example, each year the Hanford Police Department presents the "Stop on a Dime" Program to elementary schools in Hanford. Many police departments also provide bicycle registration programs on a continual basis with no fee charged. Bicycle safety programs are also offered at the request of local schools.

Measures to encourage the use of bicycle and walk modes along with measures to increase transit ridership mutually assist each other because the modes are often complimentary.

In addition, in enabling people to make short trips on foot instead of car, the use of walk mode contributes to improving air quality conditions. Creating safe opportunities for walking is critical to improving the safety of pedestrians, especially for young pedestrians with preference of walking to school. The County of Kings has completed the Safe Routes to School project for Kettleman City and Home Garden. In order to provide children with safer access to school, the projects involve constructing new sidewalk and curb/gutters, installing bicycle racks, installing lighted-in-ground crosswalk, and improving drainage facilities.

6. Alternative Fuel Vehicles/ Electric Vehicles

Although it does not impact travel behavior, decreases in vehicle emissions can be achieved through the use of cleaner burning fuels. Until recently, the developing technology and lack of a network of alternative fueling facilities has made it difficult to implement the use of alternative fuels in Kings County.

A significant number of alternative fuel projects have been funded by KCAG, our local agencies, the SJVAPCD, and utility companies which have made it possible to further the implementation of alternative fuels throughout the Valley.

Kings County has constructed a compressed natural gas (CNG) fueling facility at its corporate yard and has converted a major portion of its vehicle fleet to CNG. KART has also converted its fleet to CNG use. Additionally, the City of Lemoore, in conjunction with the Lemoore Union High School District, Lemoore Union Elementary School District, Central Unified School District, and Island Union Elementary School District, has constructed a CNG fueling facility for multiple agency use, which is also available to the public. Other public agencies and school districts within Kings County have also constructed alternative fueling stations and are in the process of converting their vehicle fleets.

As for supporting the use of electric vehicles, local agencies have successfully purchased electric vehicles and installed electric vehicle charging stations through grant funds from the San Joaquin Valley Air Pollution Control District and Southern California Edison. KCAG will be preparing a Regional Electric Vehicle Readiness Plan to identify effective strategies to encourage the continuing growth of electric vehicle deployment throughout the County.

#### 7. Passenger Rail and Support Facilities

Passenger rail and support facilities are provided to give travelers an alternative to the automobile for longer trips. Amtrak intercity passenger rail service is available with the *San Joaquins*. This service provides an ideal opportunity for inter-modal connections in support of other regional public and private transportation providers at station locations.

Two stations are located within Kings County at Hanford and Corcoran. These stations have been upgraded into intermodal facilities that include options to transfer to other transportation providers for increased transit efficiency. Caltrans has implemented rail and signal projects to speed up the trains to reduce travel time in an effort to increase ridership. The new “California Cars” have been placed in service on the *San Joaquins*, which include more modern passenger amenities. Over time, trains have been added to the service to provide six daily round trips between Bakersfield and Oakland/Sacramento. Marketing campaigns are used to promote the *San Joaquin’s* trains through television and radio advertisements. Fare promotions have also contributed to increased ridership.

Assembly Bill 1779 (AB 1779) authorized regional government agencies’ ability to form the San Joaquin Joint Powers Authority (SJJPA), which will move the governance/management of the existing San Joaquin intercity rail service to a interregional control. The Hanford station has the fourth highest ridership on the *San Joaquins* rail corridor. The importance of keeping this corridor intact and available to Kings County and our neighbor counties prompted the participation of KCAG in the recently formed SJJPA. The intent of the SJJPA is to bring the decision-making for the corridor closer to the actual riders and to focus improvements where they will best benefit the riders.

#### 8. Park-and-Ride Lots

To help promote ridesharing, designated park-and-ride lots provide a meeting place for commuters to form carpools for the majority of their trip. Park-and-ride lots are best located near major highways and arterials and are most effective on corridors of sufficient length serving metropolitan areas or specific employment designations.

Most park-and-ride lots are constructed and designated with signs and used exclusively for that purpose, while others spring up in underused parking lots. Existing parking areas used by carpoolers should be located and plans made to designate these areas as park-and-ride lots with the Caltrans dispatch number posted. This may encourage others to carpool if they are aware that these lots exist.

A formal park-and-ride lot has been constructed at the intersection of State Highway 43 and 10th Avenue on the north end of Hanford for commuters traveling to Fresno and Corcoran, and another lot is programmed on 6th Street in Hanford.

9. Telecommunications

The availability of a telecommunication system or center enables commuters to eliminate or reduce the length of their trips to work. Telecommunications generally include both teleconferencing and telecommuting.

A trip to attend a meeting could be eliminated by the use of teleconferencing equipment by an employee to participate in the meeting from the current employment site. Telecommuting could also eliminate a trip to work altogether by allowing an employee to use a personal computer to conduct work activities at home.

Caltrans and the SJVAPCD have developed telecommunications systems that may be used by other agencies to reduce the need for trips to meetings of a regional nature.

The eight Regional Transportation Planning Agencies worked to purchase teleconferencing equipment in 2009, with the assistance of a grant from the SJVAPCD. This system is used by each agency to conduct meetings of a regional nature to reduce the amount of vehicle travel that would otherwise be made to physically attend meetings. KCAG also allows use of its teleconferencing equipment by member agencies and outside agencies who request the service for other meetings.

10. Alternative Work Schedules

To encourage employee travel to and from work outside the peak period, employers can offer alternative work schedules. The effect could be reduced congestion and smooth traffic flow during peak commuting hours by spreading the period over a greater range of time.

Efforts should be made to maintain existing carpools and to encourage new carpools to increase the effectiveness of alternative work schedules.

B. VALLEYWIDE TCM PROGRAMS

1. Smoking Vehicle Program

To encourage vehicle operators to maintain their vehicles and improve tailpipe emissions, the SJVAPCD has implemented a program that will notify owners that their vehicle is visibly emitting excessive tailpipe smoke. A toll-free number is available for people to call and report "smoking vehicles". The SJVAPCD then contacts the vehicle owner and asks them to voluntarily have the vehicle checked or repaired.

This program is districtwide and includes Kings County. Since 1993, there have been more than 32,000 reports of smoking vehicles. About 50% of vehicle owners who respond to a notification sent to them say they have repaired their vehicles.

2. Employer Trip Reduction Programs

The SJVAPCD adopted Rule 9410 - Employer Based Trip Reduction in December of 2009 as a requirement for certain employers to develop an Employer Trip Reduction Implementation Plan and create incentives for their employees to reduce single-occupant vehicle trips to work. Employers could choose from some of the options and programs noted above, and any others to meet specific point targets specified in the rule.

3. Spare the Air Program

The SJVAPCD developed an educational program to notify the public when unhealthy levels of air pollution are forecasted during the summer months. On these days, the public is encouraged to reduce emissions by avoiding the use of gas-powered garden equipment, aerosol spray cans, charcoal lighter fluid for barbecue grills, oil-based paint, and non-essential automobile use. The public is notified by radio and television and through employers who sign up to participate and notify their employees. There are nearly 700 employers, representing 300,000 employees that are participating in the Spare the Air Program within the Valley.

In the winter months, particulate matter pollution from lighting a fireplace or stove that burns wood, pellets, or manufactured logs contributes to unhealthy air quality. The "Check Before You Burn" Program is initiated between November and February each year. This program helps to discourage or prohibit the use of burning when the air quality is expected to be unhealthy. Residents who disregard the program may receive a Notice of Violation and be subject to fines. Fines for first-time violations start at \$50. There are several exemptions to this program including homes in areas without natural gas service or homes above 3,000 feet elevation. More information on any program sponsored by the SJVAPCD can be found online at [www.valleyair.org](http://www.valleyair.org).

IV. FINANCIAL ELEMENT

To finance the implementation of TCMs, various local, regional, state, and federal funding programs are available.

A. FEDERAL SOURCES

1. Fixing America's Surface Transportation Act

The Fixing America's Surface Transportation (FAST) Act, the successor to the Moving Ahead for Progress in the 21st Century (MAP-21), was signed into law on December 4, 2015. The FAST Act authorizes \$305 billion over fiscal years 2016 through 2020 for highway, highway and motor vehicle safety, public transportation, motor carrier safety, hazardous materials safety, rail and research, technology and statistics programs. The Fast Act is the first federal law in over a decade to provide long-term funding certainty for surface transportation infrastructure planning and investment.

2. Congestion Mitigation and Air Quality

Congestion Mitigation and Air Quality (CMAQ) program funds are allocated to a Metropolitan Planning Organization (MPO) in designated nonattainment areas such as the San Joaquin Valley Air Basin. These funds are to be directed toward transportation projects that will contribute to meeting air quality standards in non-attainment areas for ozone, carbon monoxide, PM-10, and PM 2.5. Priority is to be given to implementing those projects that have documented emissions reductions associated with them and are included in the approved State Implementation Plan (SIP) for air quality as a TCM.

3. Federal Transit Act

This act provides funds to non-urbanized areas for various transit operating and capital assistance projects. Funds are available on a competitive basis or by regional apportionments under several programs for public and private non-profit transit providers, elderly and handicapped transit services, and intercity bus services. Eligible projects include those that provide access to mass transit facilities or to install racks or other equipment for transporting bicycles on mass transit.

4. Surface Transportation Program

This program provides funds that can be used for construction, rehabilitation and operational improvements for highways and bridges. This would include projects that are necessary to accommodate other transportation modes like transit and for bicycle transportation and pedestrian walkways principally for transportation, and for carrying out non-construction projects related to safe bicycle use. Funds could also be used to support transportation demand management or rideshare programs.

B. STATE SOURCES

1. Senate Bill 1

Senate Bill 1, the Road Repair and Accountability Act of 2017, was signed into law on April 28, 2017. With the goal of providing various sources of funding for transportation purposes, this legislative package authorizes \$54 billion over the next decade to fix roads, freeways and bridges in communities across California and invest more dollars to transit and safety projects.

a. Active Transportation Program (ATP)

The Active Transportation Program was created by Senate Bill 99 (Chapter 359, Statutes of 2013) and Assembly Bill 101 (Chapter 354, Statutes of 2013) to encourage increased use of active modes of transportation, such as biking and walking. The ATP is funded from various federal and state funds appropriated in the annual Budget Act. With the passage of SB 1, an additional \$1 billion is allocated for the ATP over the next ten years, which means an additional \$100 million per year will go to cities, counties and regional transportation agencies to build more bike paths, cross-walks and sidewalks.

Pursuant to statute, the goals of the Active Transportation Program are to achieve the following:

- Increase the proportion of trips accomplished by biking and walking.
- Increase the safety and mobility of non-motorized users.
- Advance the active transportation efforts of regional agencies to achieve greenhouse gas reduction goals as established pursuant to Senate Bill 375 (Chapter 728, Statutes of 2008) and Senate Bill 391 (Chapter 585, Statutes of 2009).
- Enhance public health, including reduction of childhood obesity through the use of programs including, but not limited to, projects eligible for Safe Routes to School Program funding.
- Ensure that disadvantaged communities fully share in the benefits of the program.
- Provide a broad spectrum of projects to benefit many types of active transportation users.

C. REGIONAL SOURCES

The SJVAPCD has developed programs for governmental entities, private businesses, residents, and technology improvements that have been implemented valleywide to affect emission reductions in Kings County. The following are some of the highlighted programs. More information on SJVAPCD programs that can help improve the air is available online at [www.valleyair.org](http://www.valleyair.org).

1. Heavy Duty Truck Voucher Program

The Truck Voucher Program allows participants to apply through SJVAPCD-certified dealerships to replace old, high-polluting, heavy-duty diesel trucks. Eligibility of pre-1996 model year engines is limited due to fast approaching compliance dates. All Pre-1996 engines will be evaluated on a case-by case basis.

2. Heavy Duty Waste Haulers

This program aims to replace the Heavy-Duty Truck from waste transportation companies and owner/operators that haul solid waste to landfills within jurisdiction of the San Joaquin Valley Air Pollution Control District. Under this program, the heavy-duty waste transportation trucks with 1996 through 2003 model year diesel engines would be replaced by new heavy-duty trucks powered by 2011 or newer model year engines.

3. Tune In, Tune Up Car Repair Program

The District offers a free car emission test at Tune In, Tune Up events throughout the San Joaquin Valley. Residents in the Valley may have opportunity to be eligible to receive incentives to repair, replace, or be provided directions on scrapping their high polluting vehicle. These free Saturday events occur in various locations throughout the Valley all year long.

4. Vanpool Voucher Incentive Program

The purpose of this program is to encourage commuter rideshare practices among frequent long distance riders in the Valley, thus reducing air pollution emission from passenger vehicles. Valley residents are provided with subsidies to participate in vanpool in stead of using single occupant vehicle commutes to work.



5. Lower Emission School Bus Program

Funding is available to replace pre-1977 and the oldest 1977-1986 school buses with a retrofit of 1987 and newer buses with an ARB Level 3 verified emission control device

6. Public Transportation Subsidy and Park & Ride Lots

The intention of this program is to encourage commuter rideshare activities for daily long distance travel. This Program provides public transportation pass subsidies, such as for rail and transit services, and for the construction of park-and-ride lots which connect commuters to alternative transportation modes.

7. Carl Moyer Program

The SJVAPCD and the Great Basin Unified Air Pollution Control District jointly administer the Carl Moyer Program. The program provides incentive funds for the implementation of new reduced emission technology. Categories include heavy duty on-road vehicles, off-road vehicles, and stationary agricultural irrigation pump engines.

8. REMOVE II

The Reduce Motor Vehicle Emissions (REMOVE II) funds are administered by the SJVAPCD to fund projects in the region that reduce emissions from motor vehicles. Funds are derived from a \$4 vehicle registration fee and are selected for funding on a competitive basis.

9. Charge up! Program

The Charge up! Program provides incentives for public agencies and businesses in the Valley to install electric vehicle Level 2 chargers for public access to promote clean air alternative fuel technologies and the use of zero emission vehicles. Publically accessible EV chargers must be available for the public at a minimum of 30 hours per week during hours that would be reasonably used by the public.

10. Drive Clean! Rebate Program

This Program is intended to provide rebates to Valley residents and businesses for the purchase or lease of new, clean-air vehicles. Applicants considered for a rebate must purchase or lease a vehicle from the eligible vehicle list.

11. Public Benefit Grants

This program is designed for providing Valley public institutions with funds towards a wide variety of clean-air, public-benefit projects which will bring a direct benefit to Valley residents. Funding opportunities are available under several components of this program, including new alternative fuel vehicle purchase, community improvement projects for reducing vehicle use, alternative fuel infrastructure construction, and enhanced transportation strategy implementation.

12. E-MOBILITY

The E-MOBILITY Program is intended for the development or expansion of telecommunications services and electronic technology to reduce the dependence of the public on vehicle travel. Eligible projects include video conferencing, Internet business transactions, and telework sites.

D. LOCAL SOURCES

1. Transportation Development Act (TDA)

The Transportation Development Act of 1971 instituted a regular funding source for various local transportation programs. Special emphasis is given to local transit systems through the Local Transportation Fund (LTF) and the State Transit Assistance (STA) fund.

Of the LTF revenue that becomes available each year in Kings County, about 40 percent is normally directed to support local transit services. Up to two percent of each county's annual LTF can also be claimed by local jurisdictions to be used for installing or maintaining bicycle and pedestrian facilities and bicycle safety programs. STA funds can only be used for transit.