

CHAPTER 10: AIR QUALITY



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. SJVAPCD's monitoring stations are shown in Figure 10-1 below.

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 continues 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.



SAN JOAQUIN COUNTY

- 1 Stockton-Hazelton: G, M, P, F, T
- 2 Tracy-Airport: G, M, P, F
- 3 Manteca: P, F, M

STANISLAUS COUNTY

- 4 Modesto-14th: G, M, P, F
- 5 Turlock: G, M, P, F

MERCED COUNTY

- 6 Merced-M St: P, F
- 7 Merced-Coffee: G, F, M

MADERA COUNTY

- 8 Madera City: G, P, F, M
- 9 Madera-Pump Yard: G, M

FRESNO COUNTY

- Other¹:**
Monache Tribe / Foothill Yokut Indians
- 10 Table Mountain AMS¹: G, F, P, M
 - 11 Tranquility: G, F, M
 - 12 Fresno-Sky Park: G, M
 - 13 Clovis: G, M, P, F
 - 14 Fresno-Garland: G, M, P, F, T, N
 - 15 Fresno-Pacific: F
 - 16 Fresno-Drummond: G, P, M
 - 17 Fresno-Foundry: G, M, F
 - 18 Parlier: G, M
 - 19 Huron: F, M

KINGS COUNTY

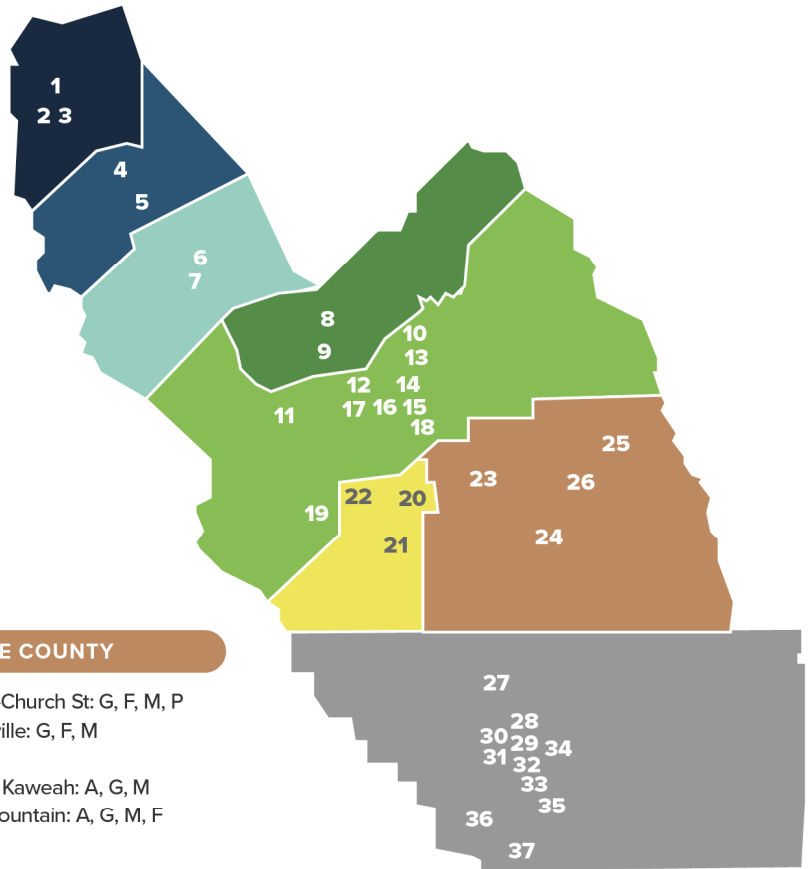
- 20 Hanford: G, F, M, P
 - 21 Corcoran: F, M, P
- Other¹:**
Tachi Yokut Tribe
- 22: Santa Rosa Rancheria: G, M, P

TULARE COUNTY

- 23 Visalia-Church St: G, F, M, P
 - 24 Porterville: G, F, M
- Other²:**
- 25: Lower Kaweah: A, G, M
 - 26: Ash Mountain: A, G, M, F

KERN COUNTY

- 27 Shafter: G, M
- 28 Oildale: G, M, P
- 29 Bakersfield-Golden: F, P
- 30 Bakersfield-Westwind: G, M
- 31 Bakersfield-California: G, M, P, F, T
- 32 Bakersfield-Muni: G, M
- 33 Bakersfield-Airport (Planz): F
- 34 Edison: G, M
- 35 Arvin-Di-Giorgio: G, M
- 36 Maricopa: G, M
- 37 Lebec: F, M



MONITORING DESIGNATIONS

- F Fine Particulate (PM2.5)
- G Gaseous
- M Meteorological
- P Particulate (PM10)
- N National Core
- T Toxins

MONITORING OPERATION

- Sites Operated by the District
- Sites Operated by the District & CARB
- Sites Operated by CARB
- Sites Operated by other agencies
- Other¹ Tribal
- Other² National Park Service
- Air Monitoring Station (AMS)

FIGURE 10-1: AIR MONITORING SITES IN THE SAN JOAQUIN VALLEY

Source: SJVAPCD

AIR QUALITY MANAGEMENT PLANS

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. Prior air quality control efforts are detailed in Appendix III.

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.

AIR QUALITY PROGRAMS

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. Additional information on many of these programs can be found in earlier chapters, particularly Chapters 4, 6, and 8.

Traffic Flow Improvements

Traffic flow improvements will ease congestion and reduce pollutants. New signals, signal synchronization, addition of turn lanes, construction of roundabouts, 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, constructing roundabouts, 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.

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 Regional 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 has a KART transit stop and an Amtrak bus stop located in the central business district next to the SJVRR tracks, which would also serve as a stop for the Cross Valley service in the future.

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.

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, KART vanpools, 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, www.kartbus.org, or www.calvans.org.

The County of Kings 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. In 2021, KCAPTA developed a new KART Vanpool program and contracted with Enterprise to manage the vanpool.

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.

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
- Kings County Association of Governments
- Madera County Transportation Commission
- Merced County Association of Governments
- Riverside County Transportation Commission
- San Joaquin Council of Governments
- Santa Barbara County Association of Governments

- Stanislaus Council of Governments
- Tulare County Association of Governments
- Ventura County Transportation Commission

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. The City of Corcoran received ATP grant funds in 2021 for Safe Routes to School infrastructure improvements.

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, 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 has prepared the 2020 Electric Vehicle Readiness Plan and has identified regional needs for electric vehicles. Local agencies have added electric vehicle chargers to public facilities and encouraging the construction of electric vehicle charging stations on new projects. The City of Corcoran received a Caltrans SB 1 Sustainable Communities grant in FY 21-22 for the development of an Electric Vehicle Charging Infrastructure Plan that will evaluate the physical and financial feasibility of developing a public charging network within the city that will help the city meet its target for converting the city vehicle fleet to electric and lay the groundwork for a network to support residents' use of electric vehicles.

There has also been significant private EV charging facility investment in Kings County due to its strategic location between Silicon Valley and Los Angeles along I-5. In 2021, Tesla announced plans to expand its 40-supercharger facility in Kettleman City with an additional 56 chargers, creating one of the world's largest Tesla charging facilities.

KCAG will be preparing the Zero Emission Bus Implementation Plan 2023 for both KCAPTA and City of Corcoran to determine the appropriate and most efficient zero emission infrastructure system for each operator.



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. New passenger rail 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), in order to move the governance/management of the existing San Joaquin intercity rail service to 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.

Park-and-Ride Lots

Park-and-ride lots help to decrease emissions by reducing the number of single occupancy vehicles and promoting transit use.

KCAPTA also sought funding for an additional Park & Ride lot with CMAQ funds, which will be constructed just north of the new KART Hanford station in FY 2024-25.

Telecommunications / Teleworking

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.

Teleconferencing websites such as Webex, Zoom, and Teams have allowed for the reduction in travel to attend meetings in person. The ability of allowing employees to work remotely from home has also greatly reduced the need for travel.

Alternative Work Schedules

Alternative work schedules can decrease emissions by smoothing existing peak-hour traffic across more hours to decrease idling in congestion. Efforts should be made to maintain existing carpools and to encourage new carpools to increase the effectiveness of alternative work schedules.

VALLEYWIDE TCM PROGRAMS

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.

Employer Trip Reduction Programs

The SJVAPCD adopted Rule 9410 - Employer Based Trip Reduction in December of 2009 to help reduce mobile emissions sources. A menu-based program, employers select options to meet a points-based criteria to help their employees reduce their single occupant vehicle usage. Some of the programs eligible for use in an eTRIP are detailed in this chapter.

Healthy Air Living 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. This program has recently rebranded and expanded to include The Healthy Air Living, a multipronged outreach effort that offers support and tools to help Valley schools make informed decisions about outdoor activities in relation to air quality. 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.

SJVAPCD INCENTIVE PROGRAMS

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.

SB 836 Wildfire Smoke Clean Air Centers Pilot Program

The SB 836 (2019) Clean Air Centers Pilot Program distributes air filtration devices at low- or no-cost to facilities in areas that have had high cumulative smoke exposure in areas proximate to vulnerable populations. SJVAPCD has been allotted \$693,750 to spend on this pilot program.

Emergency Vehicle Replacement Program

SJVAPCD works with local jurisdictions and emergency departments to replace older diesel emergency vehicles (e.g. ladder trucks for fire departments) with newer vehicles running cleaner engine technologies.

Alternate Fuel Mechanic Training

As the San Joaquin Valley moves towards cleaner-air technology, workforce development is needed to ensure that mechanics know how to service alternative fuel vehicles. Government agencies, private companies, or public educational institutions currently using alternative fuels programs, servicing an alternative fuels system, or making the transition to alternative fuel fleets (including the operation of alternative fuel infrastructure) are eligible for annual education/training grants.

Tune In, Tune Up Car Repair Program

The District, through Valley Clean Air Now (Valley CAN), a 501(c)(3) public charity, 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.

Public Benefit Grant Program

This general-purpose grant program assists local governments, public educational institution, and special districts to purchase alternative fuel vehicles, enhance transportation strategies, implement community projects that reduce fuel use and emissions, and install electric vehicle and alternative fuel infrastructure.

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. Publicly 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.

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 instead of using single occupant vehicle commutes to work.

Zero-Emission School Bus Replacement Incentive and Infrastructure Programs

These programs provide monetary incentives to replace existing yellow public school buses with clean replacements and money to install charging equipment.

Heavy Vehicle Replacement Programs

These programs provide incentives and grants to provide replacement or repowering across a wide variety of heavy vehicles, including waste haulers, tractors, heavy duty trucks, off-road mobile equipment, and yard vehicles.