



# Appendix C

## Mobile Source Control Strategies



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## Appendix C: Mobile Source Control Strategies

Mobile sources—on-road and off-road combined—account for over 80% of the San Joaquin Valley’s total NO<sub>x</sub> emissions in the 2012 to 2019 timeframe (see Appendix B). Mobile source emissions will decrease about 40% over this time period under already-adopted regulations and associated engine, fuel, and fleet improvements. However, the Valley’s total vehicle miles traveled (VMT) are predicted to increase about 18% over the 2012-2019 time period, as the Valley continues to be the fastest growing population in the state and continues to serve as one of the state’s major goods movement corridors.<sup>1</sup> VMT growth can offset some of regulations’ full emissions reductions potential. Considering all of this in conjunction with the magnitude of the Valley’s attainment challenges, it is clear that mobile source emissions reductions must be a key component of the District’s strategies to attain EPA’s health-based air quality standards. Additionally, mobile sources contribute significant diesel particulate matter and other toxic and ultra-fine emissions, particularly in urban and environmental justice communities. As such, mobile sources will be important sources to the District’s Risk-based Strategy.

However, the District does not have the authority to directly regulate the engines themselves. The state of California and the federal government—but not regional agencies like the District—can directly regulate tailpipe emissions from mobile sources. Under Clean Air Act (CAA) Section 209, states cannot generally adopt motor vehicle engine standards. The State of California is a noted exception, since California started adopting engine standards before the federal government. The state codifies this authority in California Health and Safety Code Section 43013, then utilizes this authority through several iterations of its mobile source regulations. The California Air Resources Board (ARB) has adopted tough regulations for heavy duty trucks, off-road equipment, and other mobile sources. This appendix includes a discussion of ARB’s mobile source regulations satisfying the Reasonably Available Control Measure (RACM) requirement. In addition to ARB regulations, the District has adopted innovative regulations such as Indirect Source Review and Employer-based Trip Reduction to reduce emissions from mobile sources, within the District’s limited jurisdiction over these sources.

The District is also prohibited from making land use decisions, although these decisions can impact the Valley’s total VMT and, thus, mobile source emissions. Land use decisions are the jurisdiction of the Valley’s cities and eight counties.

Though the District cannot directly regulate engines themselves, there are a number of approaches the District can use to reduce emissions from mobile sources in the Valley:

- **Encourage California and/or federal agencies** to adopt stronger regulations for the mobile sources under their jurisdictions.
- **Adopt regulations related to usage.** This can include regulations that indirectly reduce on-road mobile emissions by encouraging reductions in VMT, or

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<sup>1</sup> CEPAM: 2009 Almanac – Population and Vehicle Trends Tool. [www.arb.ca.gov/app/emsinv/trends/ems\\_trends.php](http://www.arb.ca.gov/app/emsinv/trends/ems_trends.php)

regulations on how certain off-road engines are used in the Valley (“in-use” regulations).

- **Develop and implement voluntary monetary incentive programs for mobile sources.** These programs may accelerate fleet turnover to achieve reductions beyond or in advance of regulations.
- **Support technology advancement.** The District can fund projects that demonstrate the effectiveness of new engine technologies. The District can also help establish infrastructure needed for alternative fuel vehicles, thus making these vehicles a more viable option for the Valley.
- **Pursue policy initiatives.** The District can use its legislative platform to pursue additional funding and federal actions related to mobile sources. The District is also a partner in the *Vision for Clean Air: A Framework for Air Quality and Climate Planning*, an interagency policy collaboration outlining a common ARB, South Coast, and Valley vision for strategies to meet federal air quality standards for ozone and PM<sub>2.5</sub>, the State’s greenhouse gas goals, and reduced public exposure to toxics (such as diesel particulates). Meeting these long-term goals will depend on introduction and deployment of transformative measures and emerging technologies, including zero-emissions goods movement. Thus, the *Vision* document will evaluate potential policies, legislation, infrastructure, and efficiencies that might provide the groundwork for ensuring that South Coast, the Valley, and California as a whole are prepared to meet the demands of long-term goals. This is to be the starting point for identifying actions that need to begin in the short-term. These actions can also contribute to the more near-term air quality needs – including the *2012 PM<sub>2.5</sub> Plan* – as well.
- **Outreach.** The District’s *Healthy Air Living* outreach program encourages Valley residents and businesses to consider air quality as part of daily decision making. Reducing vehicle trips is a core component of this program. The District also addressed mobile sources in its *Fast Track* initiative.
- **Conformity.** For “transportation conformity,” the District works with county Metropolitan Planning Organizations (MPOs) to establish transportation conformity budgets. The District also works with federal agencies under “general conformity” as these agencies mitigate certain construction, indirect, and operational emissions from their projects.
- **Other interagency cooperation.** The District’s *Guidelines for General Plans*, *Guidelines for Assessing and Mitigating Air Quality Impacts*, and related guidance are designed to help cities, counties, developers, and others consider opportunities to reduce emissions from construction equipment, indirect emissions resulting from increased VMT, and more as part of their processes.

Though this landscape can be complex, there are in fact many options at the District’s disposal for addressing the Valley’s mobile source emissions, even though many options available to the District are not regulatory. In this Mobile Source Control Measures appendix, the District summarizes equipment categories, existing emissions reductions efforts, and some future opportunities for further emissions reductions. These concepts might be pursued through non-regulatory efforts as opportunities become available, and are thus incorporated into Chapters 5 through 8 as appropriate.

## C.1 PASSENGER CARS, LIGHT-DUTY TRUCKS, MEDIUM-DUTY VEHICLES, AND MOTORCYCLES

### Category Overview

This category includes classes of vehicles used primarily for personal transportation. When the light-duty truck and medium-duty vehicle categories were first established, the majority of vehicles in the medium-duty vehicle category were primarily used for work purposes. The popularity and high sales volumes of full size pick-up trucks and SUVs have altered the light- and medium-duty truck use patterns. It is now common for trucks and SUVs to be used primarily for personal transportation.<sup>2</sup>

Passenger cars are vehicles designed primarily for transportation of persons and having a capacity of twelve or less. Light-duty trucks are trucks with a gross vehicle weight rating (GVWR) less than 5,750 lbs. Medium-duty vehicles have a GVWR between 5,751 lbs. and 8,500 lbs.

### Existing Efforts

- **District Rule 9410: Employer Based Trip Reduction**—The goal of the eTRIP Rule (Rule 9410, Employer Based Trip Reduction) is to reduce single-occupancy vehicle work commutes. Under the eTRIP Rule, the Valley's larger employers, representing a wide range of locales and sectors, select and implement workplace measures that make it easier for their employees to choose ridesharing and alternative transportation. Because of the diversity of employers covered by the eTRIP Rule, the rule was built with a flexible, menu-based approach. In the eTRIP, or "Employer Trip Reduction Implementation Plan," employers choose from a list of measures, each contributing to a workplace where it is easier for employees to reduce their dependence on single-occupancy vehicles. Each eTRIP measure has a point value, and employer eTRIPs must reach specified point targets for each strategy over a phased-in compliance schedule (2010 – 2015). The Valley Air District has continually provided employer assistance through training, guidance materials, promotional information, and online reporting options. Upon full implementation, the eTRIP Rule will reduce NOx and VOC emissions from passenger vehicle commute trips by approximately 1.2 ton per day. eTRIP Rule information and registration is available at [www.valleyair.org/tripreduction.htm](http://www.valleyair.org/tripreduction.htm).
- **District Rule 9510: Indirect Source Review**—In adopting Rule 9510 (Indirect Source Review, or ISR) in 2005, the District was the first air agency in the nation to control emissions from indirect sources. Clean Air Act Section 110(a)(5)(C) defines an indirect source as a "facility, building, structure, installation, real property, road, or highway which attracts, or may attract, mobile sources of pollution." The District prevailed in all legal challenges to the ISR rule, which reduces mobile source emissions from new development projects. ISR's on-site

<sup>2</sup> California Air Resources Board [ARB]. (1999). "Lev II" And "Cap 2000" Amendments To The California Exhaust And Evaporative Emission Standards And Test Procedures For Passenger Cars, Light-Duty Trucks And Medium-Duty Vehicles, And To The Evaporative Emission Requirements For Heavy-Duty Vehicles: Final Statement Of Reasons. Retrieved from <http://www.arb.ca.gov/msprog/levprog/levii/pstfrpt.pdf>

mitigation component encourages beneficial changes in land development patterns and practices. The off-site mitigation option applies assessed ISR fees to the District's cost-effective emissions reductions incentive programs. The District conducted extensive outreach on ISR and prepares an annual report on ISR implementation. The District's 2010 5-year evaluation of ISR implementation noted that in spite of economic downturn in the construction industry, ISR has achieved emission reductions and has resulted in positive changes in land development practices and processes in the San Joaquin Valley. No other air district has a rule quite like the District's ISR rule. As such, the District's rule is the most stringent and effective ISR rule.

- **Plug-In Electric Vehicle Readiness Plans**—The District received state and federal grants to prepare the Valley for the mass adoption of plug-in electric vehicles (PEV) by developing plans for PEV infrastructure deployment, as well as using related incentive programs to leverage funding. PEV Readiness Plans represent unprecedented collaborations involving other California air districts, Clean Cities Coalitions, COGs, transportation agencies, city agencies, county agencies, public and private utility companies, universities, manufacturers, developers, investors, the California Energy Commission, the Department of Energy, the California Air Resources Board, and the Environmental Protection Agency. The District will continue to actively seek funding to expand existing PEV-related incentive programs and develop additional incentive programs.
- **Drive Clean! Rebate Program**—This District program provides rebates for the purchase of eligible new, clean-air vehicles for residents and businesses of the San Joaquin Valley.
- **REMOVE II Program**—A suite of incentive programs administered by the District to encourage vanpooling, telecommuting, bicycle commuting, and alternative fuel adoption.
- **Polluting Automobile Scrap and Salvage Program**—Incentives targeted for the reduction of emissions from older high polluting vehicles through identification, repair, and replacement.
- **Smoking Vehicle Complaint Program**—This program was established to reduce visible exhaust from vehicles traveling in the valley, residents can call the District's toll-free number with a complaint about a smoking vehicle they have seen traveling the valley's roads and freeways.
- **Healthy Air Living™**—A comprehensive outreach initiative that aims to improve the health and quality of life of all Valley residents by encouraging people and businesses to make lasting changes in the way we live our lives, so that our air quality is positively affected.
- **Advanced Clean Cars Program**—A single package of standards adopted by Air Resources Board combining the control of smog, soot, global warming gases, and requirements for greater numbers of zero-emission vehicles.
- **Low Emission Vehicle II (LEV II) Standards**—Emission standards phased in through 2010 for all new vehicles sold in California, setting the base from which the Advanced Clean Cars Program will phase in newer standards.
- **Vision for Clean Air: A Framework for Air Quality and Climate Planning**—The Air Resources Board, in collaboration with the Valley Air District and the



South Coast Air District, is developing the Vision for Clean Air document to frame the long-term goals for 2050 (greenhouse gasses) and 2035 (75 ppb ozone), with the needs for mid-term 2023 (85 ppb ozone) and 2019 (PM2.5) emission reductions in both the trucking as well as the transportation sectors.

- **Smog Check Program**—Smog Check inspections are designed to identify and either repair or retire high polluting vehicles. The program is administered by the California Department of Consumer Affairs, Bureau of Automotive Repair.
- **California Reformulated Gasoline**—Regulations adopted by Air Resources Board established a comprehensive set of specifications to provide reductions of ozone and particulate matter precursor emissions and toxic air pollutants.
- **Clean Vehicle Rebate Program**—A statewide program funded by the Air Resources Board to promote the production and use of zero-emission vehicles, including electric, plug-in electric, and fuel cell vehicles.
- **Clean Air Vehicle Decals (HOV Stickers)**—Clean Air Vehicle (CAV) Decals allows vehicles to use High Occupancy Vehicle Lanes regardless of vehicle occupancy until January 1, 2015. White CAV decals are available to an unlimited number of qualifying vehicles meeting the federal inherently low-emission vehicle (ILEV) and California super ultra-low emission vehicle standard requirements and certain Advanced Technology Partial Zero-Emission Vehicles, such as certified zero emission vehicles. Green CAV decals are available to a limited number of qualifying vehicles meeting California's Enhanced Advanced Technology Partial Zero Emission Vehicle requirements.
- **Federal Vehicle Tax Credits**—Tax credits available for the purchase or lease of a qualified new plug-in electric drive motor vehicle range between \$2,500 and \$7,500 with factors such as battery capacity determining how much owners are eligible to receive and with credits phasing out for a manufacture's vehicles based on cumulative sales.

### **New Opportunities**

As described above, numerous efforts exist at the state and local level to reduce emissions from this category. New opportunities to reduce emissions from passenger vehicles can be grouped into three categories: cleaner driving, reduction in vehicle miles traveled, and new technology development and adoption. In the category of cleaner driving, new opportunities include programs for congestion mitigation, such as traffic signal coordination, and public education about cleaner driving habits, also called *eco-driving*. The reduction-of-vehicle-miles-traveled category includes increases in alternative commuting, additional transit-oriented planning, and enhanced commuter rail. Potential opportunities for new technology development and adoption include clean alternative fuels and improved accessibility to electrical infrastructure. The District has added Eco-driving as a potential non-regulatory strategy in Chapter 5 of this plan. While the District is not recommending any other specific program changes targeting passenger vehicles as part of this plan, the District will continue to consider these and similar measures for reducing passenger vehicle emissions whenever opportunities arise.

## Emission Inventory

Pollutant	2007	2012	2014	2015	2016	2017	2018	2019
<b><i>Annual Average - Tons per day</i></b>								
PM2.5	1.94	1.88	1.90	1.93	1.97	2.00	2.04	2.08
NOx	51.15	34.51	27.85	25.44	23.31	21.30	19.68	18.29
SOx	0.38	0.41	0.43	0.44	0.44	0.44	0.45	0.45
<b><i>Winter Average - Tons per day</i></b>								
PM2.5	1.94	1.88	1.90	1.93	1.97	2.00	2.05	2.09
NOx	56.06	37.85	30.55	27.91	25.56	23.37	21.64	20.17
SOx	0.37	0.40	0.41	0.42	0.43	0.43	0.43	0.43

## C.2 HEAVY-DUTY TRUCKS

### Category Overview

This source category includes on-road, diesel-fueled trucks with a gross vehicle weight rating (GVWR) over 14,000 pounds. Trucks in this category are primarily used for goods movement throughout the state, between ports and rail yards (drayage trucks), as well as for interstate transport. Industries using heavy-duty trucks include for-hire transportation, construction, manufacturing, retail and wholesale trade, and vehicle leasing and rental. Buses, including school buses that meet the GVWR limit, also fall under the state's Truck and Bus Regulation; however, they are not included here for purposes of programs and inventories.

### Existing Efforts

- **CARB Truck and Bus Regulation**—Regulation to significantly reduce PM and NOx emissions from existing diesel vehicles operating in California. The regulation applies to privately or federally owned, diesel-fueled trucks and buses with a gross vehicle weight rating (GVWR) greater than 14,000 pounds. Reductions are implemented through a compliance schedule based on the engine model year. By 2023, all trucks and buses must have engines certified to EPA's 2010 emission limits.
- **CARB Drayage Truck Regulation**—Regulation to significantly reduce PM and NOx emissions from existing diesel vehicles that transport cargo to and from California's ports and intermodal rail yards.
- **CARB Fleet Rule for Public Agencies and Utilities**—Regulation to reduce diesel PM from vehicle fleets operated by public agencies and utilities.
- **CARB Solid Waste Collection Vehicle Rule**—This 2003 regulation applies to model year 1960 to 2006 waste-collection vehicles weighing more than 14,000 pounds that collect waste for a fee. Such vehicles are required to install ARB-verified BACT devices to reduce diesel smoke emissions.
- **CARB Heavy-Duty Diesel Engine Software Upgrade Regulation (Chip Reflash)**—Low NOx software upgrade is computer programming which reduces excess emissions of oxides of nitrogen (NOx) in 1993-1998 model year heavy-duty trucks, school buses, and motor homes with engines manufactured by Caterpillar, Cummins, Detroit Diesel Corporation, Mack/Renault, Volvo and International. The software is required to be installed during rebuilds of the engines listed above; however, ARB encourages voluntary efforts to have the software installed prior to engine rebuild.
- **CARB Diesel-Fueled Commercial Motor Vehicle Idling Regulation**—Regulation to limit the time and location of diesel engine idling.
- **CARB Transport Refrigeration Unit (Reefer) Airborne Toxic Control Measure (ATCM)**—ARB requires all transport refrigeration units (TRU) and TRU gensets that operate in California, regardless of where they are based, to meet in-use performance standards for particulate matter for model year 2001 and older units, beginning December 31, 2009.
- **CARB Heavy-Duty Diesel Emission Control Labeling Program**—Requires that all diesel engines have legible emission control labels.

- **CARB Heavy-Duty Greenhouse Gas Regulation**—Adopted in 2008, this regulation requires heavy-duty trucks to improve fuel efficiency through improvements in tractor and trailer aerodynamics and the use of low-rolling resistance tires.
- **Vision for Clean Air: A Framework for Air Quality and Climate Planning**—The Air Resources Board, in collaboration with the Valley Air District and the South Coast Air District, is developing the Vision for Clean Air document to frame the long-term goals for 2050 (greenhouse gasses) and 2035 (75 ppb ozone), with the needs for mid-term 2023 (85 ppb ozone) and 2019 (PM2.5) emission reductions in both the trucking as well as the transportation sectors.
- **District's Proposition 1B Goods Movement Emission Reduction Program**—Grant program to replace, retrofit, or repower on-road heavy-duty trucks.
- **District's On-Road Voucher Incentive Program**—Voucher program to replace or retrofit on-road medium-duty and heavy-duty trucks.
- **District's Heavy-Duty Truck Voucher Program**—Voucher program to replace or retrofit on-road heavy-duty trucks.
- **District's Short-Sea Shipping**—Incentives for moving shipping containers by barge, thus eliminating the need for heavy-duty trucks transporting containers from ports and intermodal rail yards.

### **New Opportunities**

As described above, numerous efforts exist at the state and local level to reduce emissions from this category. The District's review of opportunities for this source category includes continuation of the Proposition 1B Goods Movement Emission Reduction Program, the District's Truck Replacement Program, and the Heavy-Duty Truck Voucher Program.

Advancing the turnover of heavy duty trucks to cleaner vehicles that operate on alternative fuels (CNG, LNG, electricity, etc.) is a critical component of reducing emissions. ARB's adopted fleet rules, together with ARB's and the District's incentive programs have greatly reduced emissions from public fleet vehicles. South Coast Air Quality Management District currently has a fleet rule that requires that solid waste collection vehicle fleets transition to operating entirely on alternative fuel beginning in 2011. This is different than ARB's Solid Waste Collection Vehicles Rule, which gives fleet operators several options to meet Best Available Control Technology requirements for fine particulate matter by the end of 2010. One of those options is the use of alternative fuel. Given the stringent particulate matter requirements under ARB's rule, there is little potential emissions benefit available from requiring a transition to alternative fuels.

Many of the District's SWCV fleets have already converted to alternative fuels. For example, the city of Fresno's fleet is nearly 100% CNG. However, currently there is not an established database of alternative fuel solid waste collection vehicles in the District. ARB staff indicated that they are working to compile data received from fleet managers and this information will be available in 2013.

Transitioning a fleet from diesel to alternative fuel can be costly and may not be economically feasible. Additionally, the emissions benefit associated with such a transition is minimal given the stringent particulate matter requirements under ARB's rule, and the relatively small difference in NOx emissions, if any, between diesel and alternative fuel vehicles. Establishing new alternative fuel infrastructure can cost millions of dollars and alternative fuel SWCVs generally cost \$25,000 more than diesel. Therefore, more information is needed about the District-wide SWCV fleet to understand how adopting a more stringent fleet rule would impact the Valley's municipalities.

For these reasons, the District will continue to advance the turnover of SWCVs through the use of incentive funds rather than adopting a fleet rule. The District's Heavy-Duty Engine Program has already funded 115 natural gas fired refuse trucks, and the Public Benefits Grant Program will soon provide funds for alternative fuel infrastructure. ARB can also aid municipalities through their Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project.

While the District is not recommending any specific program changes targeting heavy-duty trucks as part of this plan, the District will continue to consider these and similar measures for reducing emissions whenever opportunities arise.

### Emission Inventory

Pollutant	2007	2012	2014	2015	2016	2017	2018	2019
	<b><i>Annual Average - Tons per day</i></b>							
PM2.5	6.91	4.65	2.73	2.33	2.15	2.04	2.04	2.04
NOx	229.67	137.71	119.66	107.44	97.23	89.80	83.47	78.48
SOx	0.26	0.25	0.27	0.28	0.30	0.31	0.31	0.32
	<b><i>Winter Average - Tons per day</i></b>							
PM2.5	6.95	4.66	2.74	2.33	2.16	2.05	2.05	2.05
NOx	233.38	140.43	121.97	109.47	99.02	91.41	85.18	80.29
SOx	0.26	0.25	0.27	0.28	0.29	0.31	0.31	0.32

### C.3 BUSES

#### Category Overview

This source category includes diesel-fueled buses, including public or privately owned school buses, with a gross vehicle weight rating (GVWR) over 14,000 pounds. The number of buses that are in this source category is relatively small (less than 4,000 in 2011, EMFAC2011) compared to the number of heavy-duty trucks also meeting the 14,000 GVWR limit and covered by the State Truck and Bus Regulation. However, as the primary means of public transportation, including transportation of the Valley's children, minimizing emissions from this category is of high importance.

#### Existing Efforts

- **Small School District and County Office of Education Bus Replacement Program**—The California Department of Education administers this grant program, in which small school districts and county offices of education with an average daily attendance of fewer than 2,501 students may apply for funding to purchase new school buses to replace pre-1992 school buses.
- **Lower-Emission School Bus Program**—Local air districts administered the state-funded Lower-Emission School Bus grant program. This program provided funding to public school districts and joint powers authorities (JPAs) to replace model-year 1986, and older, school buses, or to retrofit school buses with a 1987 or newer model-year engine. While the state funding for this program has been expended, the District continues to secure additional funding to support the goals of this program and needs of Valley school districts.
- **Statewide School Bus Retrofit Program**—The District administers the Statewide School Bus Retrofit program to provide funding to public school districts, joint powers authorities, and private transportation providers, which contract with public school districts, to retrofit 1987-model year and newer school buses with an ARB-verified level-3 diesel retrofit.
- **Hybrid Truck and Bus Voucher Incentive Program (HVIP)**—The ARB provides vouchers to California fleets for the purchase of hybrid and zero-emission trucks and buses. The vouchers range from \$10,000 to \$30,000 and are awarded on a first-come-first-served basis.
- **Measure C School Bus Replacement Program**—Fresno County administers the Measure C School Bus Replacement program, which uses a local retail-transaction-and-use tax to fund school bus replacements for Fresno County school districts.
- **Vision for Clean Air: A Framework for Air Quality and Climate Planning**—The Air Resources Board, in collaboration with the Valley Air District and the South Coast Air District, is developing the Vision for Clean Air document to frame the long-term goals for 2050 (greenhouse gasses) and 2035 (75 ppb ozone), with the needs for mid-term 2023 (85 ppb ozone) and 2019 (PM2.5) emission reductions in both the trucking as well as the transportation sectors.
- **District Rule 9310 (School Bus Fleets)**—The District approved Rule 9310 (School Bus Fleets) on September 21, 2006. The rule applies to diesel-fueled school buses with a gross vehicle weight rating of greater than 8,500 pounds.

Per the rule, all school buses manufactured prior to January 1, 1978, shall be replaced by January 1, 2016. School buses manufactured after January 1, 1978, shall either be replaced with a bus meeting emissions current emissions standards, or retrofitted or repowered with an engine manufactured on or after October 1, 2002.

- **State Truck and Bus Regulation**—The ARB approved the California Truck and Bus Regulation on December 12, 2008. This rule requires diesel-fueled school buses with a gross vehicle weight rating of greater than 14,000 pounds to meet specific particulate matter reductions. School buses manufactured prior to April 1, 1977, are to be taken out of service by January 1, 2012 and all other school buses are to have a retrofit device installed by specific compliance deadlines, with a final compliance deadline of January 1, 2014.
- **Airborne Toxic Control Measure**—The ARB approved the Airborne Toxic Control Measure to limit school bus idling and idling of all buses at or near schools. Idling is restricted within 100 feet of a school and operators are to turn off engines upon arrival and start the engine within 30 seconds of leaving. Operators are to limit idling to 5 minutes at all other locations. Exemptions apply for specific circumstances.
- **Fleet Rule for Transit Agencies**—The ARB adopted the Fleet Rule for Transit Agencies in 2000 in an effort to reduce both criteria pollutant emissions and exposure to toxic air contaminants from urban buses and transit fleet vehicles. The rule requires more stringent exhaust emission standards for new urban bus engines and transit fleet vehicles. The rule also encourages the operation and use of zero-emission buses (ZEB) in California urban bus fleets, with the goal of gradually developing a California transit fleet composed of 15% zero-emission buses.

### **New Opportunities**

As described above, numerous efforts exist at the state and local level to reduce emissions from this category. Opportunities to reduce emissions from buses include continued funding for the replacement and retrofit of older school buses through local funding sources, additional voucher funding for hybrid and zero-emission buses that will be combined with the Hybrid Truck and Bus Voucher Incentive program, and funding for the replacement of expiring compressed natural gas (CNG) tanks in school buses. While the District is not recommending any specific program changes targeting buses as part of this plan, the District will continue to consider these and similar measures for reducing emissions whenever opportunities arise.

## Emission Inventory

Pollutant	2007	2012	2014	2015	2016	2017	2018	2019
<i>Annual Average - Tons per day</i>								
PM2.5	0.23	0.18	0.15	0.14	0.14	0.14	0.14	0.14
NOx	6.06	5.13	4.83	4.63	4.49	4.37	4.13	3.98
SOx	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
<i>Winter Average - Tons per day</i>								
PM2.5	0.23	0.18	0.15	0.14	0.14	0.14	0.14	0.14
NOx	6.20	5.25	4.95	4.74	4.59	4.48	4.23	4.08
SOx	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01



## C.4 AIRCRAFT AND AIRPORT GROUND SUPPORT EQUIPMENT

### Category Overview

This category consists of the variety of aircraft and airport ground support equipment (GSE) utilized in their service. Aircraft can be powered by jet turbines or piston engines, and are categorized as commercial, civil, agricultural, or military. Emissions from GSE primarily come from baggage tugs, cargo tractors, or systems that provide power or air-conditioning to aircraft while on the ground.

### Existing Efforts

- **Proposed Emissions standards by EPA for Aircraft Engines**—New emission standards and other regulatory requirements for aircraft turbofan and turbojet engines with rated thrusts greater than 26.7 kilonewtons.<sup>3</sup> These proposed emission standards will replace existing emission standards adopted in 2005.
- **CARB Off-Road Diesel Vehicle Regulation**—This regulation, as it applies to airport ground support equipment, imposes limits on idling, buying older off-road diesel vehicles, and the sale of off-road diesel vehicles. The regulation also stipulates the gradual requirement for fleet operators to progressively clean up their fleets by replacing older engines with newer engines and installing exhaust retrofits.
- **Federal Emission Standards for Nonroad Engines**—In response to environmental and public health concerns, the U.S. Environmental Protection Agency (EPA) has established emission standards for most categories of nonroad engines. These engines operate in a wide variety of applications, including airport ground support equipment.

### New Opportunities

Potential emissions reduction opportunities identified thus far include electrification of ground support equipment. While the District is not recommending any specific program changes targeting aircraft and airport ground support equipment as part of this plan, the District will continue to consider this and similar measures for reducing emissions whenever opportunities arise.

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<sup>3</sup> Control of Air Pollution From Aircraft and Aircraft Engines; Proposed Emission Standards and Test Procedures, 76 Fed. Reg. 144, pp. 45012–45052. (2011, July 27). (to be codified at 40 CFR Parts 87 and 1068)

## Emission Inventory

Pollutant	2007	2012	2014	2015	2016	2017	2018	2019
<b><i>Annual Average - Tons per day</i></b>								
PM2.5	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.58
NOx	2.64	2.71	2.73	2.74	2.75	2.76	2.76	5.06
SOx	0.36	0.39	0.40	0.41	0.41	0.41	0.42	0.47
<b><i>Winter Average - Tons per day</i></b>								
PM2.5	1.00	0.99	0.99	1.00	1.00	1.00	1.00	1.58
NOx	2.65	2.71	2.73	2.74	2.75	2.76	2.76	5.06
SOx	0.36	0.39	0.40	0.40	0.41	0.41	0.42	0.47

## C.5 LOCOMOTIVES AND OFF-ROAD RAIL OPERATIONS

### Category Overview

Locomotives can be divided into three groups: interstate line haul locomotives; medium horsepower locomotives that are mostly in California or regional service; and switch locomotives. This category also includes emissions from off-road equipment operated at rail yards. This type of equipment includes cranes, yard tractors, and material handling equipment such as forklifts.

Interstate Line Haul Locomotive are generally newer (built 1995 and later) and high horsepower (greater than 4,000 hp) locomotives that typically operate over long distances and many states. Medium Horsepower (MHP) Locomotives are typically, older locomotives that may have once served in interstate line haul service, but are now used in regional service. Switch (Yard) Locomotives are typically used to push railcars together to form trains within rail yards, but can also be used to power local and regional service trains.<sup>4</sup>

### Existing Efforts

- **District Incentive Programs**—To date, the District has provided over \$21.5 million in grant incentives to install idle limiting devices (ILD) on 16 locomotives and for the purchase of 17 clean technology switch locomotives. A new program with \$2 million in funding to repower line-haul, medium horsepower or switch locomotives was opened April 2012.
- **2005 ARB statewide pollution reduction agreement with BNSF and UP**—the railroads have agreed to reduce locomotive idling time, install idle-limiting technology, repair excessively smoking locomotives, maximize use of ultra-low sulfur (15ppm) diesel fuel, conduct health risk assessments at major railyards and prepare a report on feasible mitigation plans.
- **2004 ARB Diesel Fuel Standards pertaining to intrastate locomotives**—adoption of new standards regulating the quality of diesel fuel used in intrastate locomotives, beginning 1/1/2007.
- **Measuring locomotive emissions using remote sensing**—AB 1222 implemented a pilot program to use remote sensing devices (RSD) to measure diesel emissions from in-use locomotives, in order to compare the results to applicable federal certification standards.
- **2008 U.S.EPA Locomotive Regulation**—outlined new emission standards pertaining to line haul, passenger and switch locomotives resulting in Tier 4 emission levels by 2015.
- **2009 ARB locomotive and railyard emission reduction recommendation plan**—ideas to further implement emission reductions by repowering older switch and medium horsepower (MHP) locomotives, retrofitting older switch and medium horsepower (MHP) locomotives with diesel particulate filters and selective catalytic reduction technology, and accelerating the introduction of Tier 4 line haul and switch locomotives.

<sup>4</sup> California Air Resources Board [ARB]. (2009). Recommendations to Implement Further Locomotive and Railyard Emission Reductions. Retrieved from <http://www.arb.ca.gov/railyard/ted/drftrec090909.pdf>

- **2005 ARB Mobile Cargo Handling Equipment regulation**—requires emission reductions from diesel powered mobile equipment operating in ports and intermodal railyards. Pertains to intermodal container handling equipment, yard trucks and forklifts.
- **Vision for Clean Air: A Framework for Air Quality and Climate Planning**—The Air Resources Board, in collaboration with the Valley Air District and the South Coast Air District, is developing the Vision for Clean Air document to frame the long-term goals for 2050 (greenhouse gasses) and 2035 (75 ppb ozone), with the needs for mid-term 2023 (85 ppb ozone) and 2019 (PM2.5) emission reductions in both the trucking as well as the transportation sectors.
- **Federal Emission Standards for Nonroad Engines**—In response to environmental and public health concerns, the U.S. Environmental Protection Agency (EPA) has established emission standards for most categories of nonroad engines. These engines operate in a wide variety of applications, including locomotives and cargo handling equipment.

### New Opportunities

As described above, numerous efforts exist at the state and local level to reduce emissions from this category. Potential emissions reduction opportunities identified include providing grant funding toward the purchase of idle-limiting devices, diesel particulate filters (DPF) and selective catalytic reduction (SCR) technology (retrofit technology), and certified engine remanufacture or repower for both locomotives and head end power (HEP) units, as well as the purchase of new alternative technology locomotives. There are also opportunities to replace, repower, retrofit, and electrify cargo handling equipment such as cranes, yard trucks and forklifts operating in rail switch yards and intermodal facilities. These potential incentive-based opportunities are currently eligible under existing District incentive programs. While the District is not recommending any specific program changes targeting locomotives as part of this plan, the District will continue to consider these and similar measures for reducing emissions whenever opportunities arise.

### Emission Inventory

Pollutant	2007	2012	2014	2015	2016	2017	2018	2019
<i>Annual Average - Tons per day</i>								
PM2.5	0.57	0.40	0.40	0.40	0.39	0.38	0.37	0.36
NOx	21.68	16.41	16.97	17.10	17.04	16.93	16.69	16.48
SOx	0.06	0.01	0.01	0.01	0.01	0.01	0.02	0.02
<i>Winter Average - Tons per day</i>								
PM2.5	0.57	0.40	0.40	0.40	0.39	0.38	0.37	0.36
NOx	21.68	16.41	16.97	17.10	17.04	16.93	16.69	16.48
SOx	0.06	0.01	0.01	0.01	0.01	0.01	0.02	0.02

## C.6 SHIPS, COMMERCIAL BOATS, AND OFF-ROAD PORT OPERATIONS

### Category Overview

This category includes oceangoing ships, harbor craft such as tugboats, and the off-road equipment associated with port operations. The primary source of these emissions in the San Joaquin Valley is at the Port of Stockton, a bulk and break bulk cargo port with berthing space for 17 vessels, 1.1 million square feet of dockside transit sheds and shipside rail trackage, 7.7 million square feet of warehousing for both dry bulk and general cargoes, including steel. Each warehouse is also served by rail. The port operates three traveling, multi-purpose, 30-ton Bridge Cranes; a fleet of 30,000 to 60,000 lb. fork lift trucks; slings; spreader bars; coil rams; front-end loaders; hoppers and conveyor belts and other equipment are maintained for handling and storing steel products, other general cargoes and bulk materials.<sup>5</sup>

### Existing Efforts

- **District Incentive Programs**—The District is currently working with the Port of Stockton to provide grant funding to repower and retrofit six diesel powered forklifts and retrofit one diesel powered wheel loader.
- **Commercial Harbor Craft Regulation**—Adopted by the California Air Resources Board (ARB) in 2007 the regulation establishes in-use emission limits for both auxiliary and propulsion diesel engines on ferries, excursion vessels, tugboats, and towboats consistent with the United States Environmental Protection Agency (U.S. EPA) marine engine emission standards.
- **Ocean-Going Vessels Fuel Rule**—Adopted by ARB in 2008 this regulation is designed reduce particulate matter, oxides of nitrogen, and sulfur oxide emissions from ocean-going vessels by requiring the use of cleaner marine distillate fuels in any of the regulated California waters.
- **Equipment Electrification**—The Port of Stockton replaced four older gasoline powered trucks with electric vehicles, and utilizes an electric rather than diesel-powered dredge.
- **Federal Emission Standards for Nonroad Engines**—In response to environmental and public health concerns, the U.S. Environmental Protection Agency (EPA) has established emission standards for most categories of nonroad engines. These engines operate in a wide variety of applications, including marine and cargo handling equipment.

### New Opportunities

Potential emissions reduction opportunities identified thus far include further electrification and additional grants funding for port related off-road equipment. While the District is not recommending any specific program changes targeting ships, commercial boats, and off-road port operations as part of this plan, the District will continue to consider these and similar measures for reducing emissions whenever opportunities arise.

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<sup>5</sup> Port of Stockton. (2012) Retrieved April 11, 2012, <http://www.portofstockton.com/>

## Emission Inventory

Pollutant	2007	2012	2014	2015	2016	2017	2018	2019
<b><i>Annual Average - Tons per day</i></b>								
PM2.5	0.06	0.03	0.03	0.02	0.02	0.02	0.02	0.02
NOx	1.02	0.84	0.83	0.76	0.78	0.74	0.72	0.71
SOx	0.47	0.06	0.05	0.05	0.06	0.06	0.06	0.07
<b><i>Winter Average - Tons per day</i></b>								
PM2.5	0.06	0.03	0.03	0.02	0.02	0.02	0.02	0.02
NOx	1.02	0.84	0.83	0.76	0.78	0.74	0.72	0.71
SOx	0.47	0.06	0.05	0.05	0.06	0.06	0.06	0.07

## C.7 RECREATIONAL: BOATS, MOTOR HOMES, AND OFF-HIGHWAY VEHICLES

### Category Overview

This category includes vehicles intended for consumer recreational activities. Major subcategories include boats and spark-ignition auxiliary marine engines (power generators, winches, or auxiliary propulsion engines for sail boats); Motor homes and associated auxiliary engines; and off-road motorcycles (dirt bikes) and all-terrain vehicles (ATVs); engines used in specialty vehicles and go-karts; Sand Cars (i.e., dune buggies, sand rails, etc.); and golf carts.

### Existing Efforts

- **California Air Resources Board (ARB) Engine Regulations**—Engines for this category are regulated by ARB’s Small Off Road Engine, Tier 4 Off-Road Compression Engine, Off-Road Spark-Ignition Engines, Equipment, and Vehicles regulations.
- **“Red Sticker” Registration**—2003 and newer off-highway vehicles with Engines that do not meet California engine standards may be registered as a special class with limits placed on their use during the summer months.
- **On-road Engine Regulations**—Motor homes must meet ARB on-road engine standards for their size class as medium- or heavy-duty vehicles.
- **Golf Cart Zero Emission Requirement**—Since January 1, 1997, new golf carts purchased for operation within federal ozone non-attainment areas must be zero-emission golf carts (e.g., electric).

### New Opportunities

While the District is not recommending any specific program changes targeting recreational vehicles as part of this plan, the District will continue to consider measures for reducing emissions whenever opportunities arise.

### Emission Inventory

Pollutant	2007	2012	2014	2015	2016	2017	2018	2019
	<i>Annual Average - Tons per day</i>							
PM2.5	0.55	0.45	0.41	0.40	0.39	0.37	0.36	0.35
NOx	2.88	2.51	2.43	2.40	2.37	2.35	2.33	2.31
SOx	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	<i>Winter Average - Tons per day</i>							
PM2.5	0.24	0.20	0.18	0.18	0.17	0.17	0.16	0.16
NOx	1.66	1.44	1.35	1.33	1.30	1.28	1.26	1.24
SOx	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

## C.8 OTHER OFF-ROAD VEHICLES AND EQUIPMENT

### Category Overview

This category includes all self-propelled off-road diesel vehicles over 25 horsepower and all two-engine vehicles, except two-engine sweepers. Examples of such vehicles are single-engine oil drilling and workover rigs; backhoes, excavators, loaders, forklifts, and other construction and mining equipment; and two-engine cranes or water-well drilling rigs. Diesel agricultural vehicles, locomotives, marine vehicles, and recreational vehicles are not included in this category.

### Existing Efforts

- **In-Use Off-Road Diesel Vehicle Regulation**—CARB adopted the In-Use Off-Road Diesel Vehicle Regulation on July 26, 2007 to reduce diesel PM and NOx emissions from existing off-road heavy-duty diesel vehicles. This regulation imposes limits on idling, the buying of older off-road diesel vehicles, and the sale of off-road diesel vehicles. The regulation also stipulates the gradual requirement for fleet operators to progressively clean up their fleets by replacing older engines with newer engines and installing exhaust retrofits.
- **Heavy-Duty Engine Program**—The District's Heavy-Duty Engine program provides incentive funds for new reduced-emission technology for non-agricultural forklifts and other off-road vehicles such as non-agricultural tractors, backhoes, and excavators.
- **Federal Emission Standards for Nonroad Engines**—In response to environmental and public health concerns, the U.S. Environmental Protection Agency (EPA) has established emission standards for most categories of nonroad engines. These engines operate in a wide variety of applications, including construction and mining equipment.

### New Opportunities

As described above, numerous efforts exist at the state and local level to reduce emissions from this category. Opportunities to reduce emissions from off-road vehicles and off-road equipment include incentives for zero-emission forklifts; incentives electric-hybrid construction equipment, such as loaders; and incentives for re-powering specialized equipment, such as road-paving equipment. These potential incentive-based opportunities are currently eligible under existing District incentive programs. While the District is not recommending any specific program changes targeting off-road vehicles and off-road equipment as part of this plan, the District will continue to consider these and similar measures for reducing emissions whenever opportunities arise.



## Emission Inventory

Pollutant	2007	2012	2014	2015	2016	2017	2018	2019
	<i>Annual Average - Tons per day</i>							
PM2.5	2.18	1.49	1.31	1.25	1.18	1.13	1.03	0.96
NOx	44.14	31.63	30.07	29.57	28.58	27.80	26.13	25.09
SOx	0.03	0.02	0.02	0.02	0.03	0.03	0.03	0.03
<i>Winter Average - Tons per day</i>								
PM2.5	2.17	1.47	1.29	1.23	1.17	1.12	1.02	0.95
NOx	44.17	31.62	30.06	29.57	28.58	27.80	26.14	25.10
SOx	0.03	0.02	0.02	0.02	0.03	0.03	0.03	0.03

## C.9 FARM EQUIPMENT

### Category Overview

The Farm Equipment category includes wheel tractors, agricultural mowers, agricultural tractors, balers, combines, hydro-power units, sprayers, swathers, tillers, and other agricultural equipment. It includes equipment fueled by gas and diesel. It is also bifurcated by exhaust and evaporative emissions for each applicable piece of equipment.

There is some overlap of farm equipment with equipment used for construction. The California Air Resources Board (ARB) allows farm equipment to be used for construction up to 50% of its usage; if used for 51% or more then it must be registered with ARB's Diesel Off-Road On-Line Reporting System (DOORS). Farm equipment can be used for crop demolition; therefore as long as the equipment is considered to be used in an agricultural setting it is considered Farm Equipment. Many farmers use their equipment for more than one specific type of crop or service in their business; the NRCS does not assist custom farmers within their program because they require the replaced vehicle to be tied to a piece of property.

The largest contributor to the farm equipment category is tractors. The District's current tractor program focuses on diesel tractors and does not include gasoline equipment. The new tractor equipment can be up to 125% of the existing tractor's horsepower to be considered for funding in our program. The District also currently accepting diesel ag forklifts in the tractor program to be replaced. While tractors may be the largest contributor from this category, every option needs to be evaluated for additional potential opportunities.

### Existing Efforts

- **District Tractor Replacement Program**—Provides incentive funds for replacement of older, high-emitting tractors with newer, cleaner tractors.
- **Environmental Quality Incentives Program (EQIP)**—administered by the USDA Natural Resources Conservation Service, EQIP is a voluntary program authorized through the Farm Bill that offers technical and financial assistance to agricultural producers. Contracts with eligible farmers and ranchers provide incentive payments to implement conservation practices that address natural resource concerns with improving soil, water, air, plant, animal, and energy resources. Under the Air Quality Initiative, EQIP payments have improved air quality resources within the Valley by repowering and replacing old, higher-polluting stationary irrigation pump engines and mobile off-road agricultural engines with newer, cleaner engines or electric technology; chipping agricultural orchard debris instead of open burning; promoting Conservation Tillage by reducing tillage and vehicle passes to limit PM emissions and fuel consumption; treating unpaved agricultural road surfaces to limit fugitive dust emissions; promoting Integrated Pest Management practices and precision spray application to limit VOC emissions and pesticide usage; installing windbreaks and shelter breaks around Confined Animal Facility Headquarters to help capture fugitive

dust; injecting manure into the soil to help control dairy odors and limit VOC emissions; and properly disposing chemically-treated wooden grape stakes to prevent accidental burning or leaching of toxic substances.

- **Heavy Duty Engine Program—Off-Road Vehicle Repower and Ag Pump Repower**
  - **Off-Road Vehicle Repower**—This component provides incentives for engine replacement (repower) or retrofit of off-road self-propelled vehicles such as tractors, backhoes, and excavators.
  - **Ag Pump Repower**—This component provides incentives for engine replacement (repower) or new electric motor purchase of engines and/or electric motors used to power agricultural irrigation pumps.
- **Agricultural Electric Utility Terrain Vehicle (UTV)** —Provided rebate for electric UTVs used for farming purposes.
- **SJVAPCD Rule 4702 (Internal Combustion Engines)** —Limits the emissions of nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), volatile organic compounds (VOC), and sulfur oxides (SO<sub>x</sub>) from internal combustion engines.
- **SJVAPCD Rule 4550 (Conservation Management Practices)** —Limits particulate emissions from agricultural operation sites using work practices.
- **Federal Emission Standards for Nonroad Engines**—In response to environmental and public health concerns, the U.S. Environmental Protection Agency (EPA) has established emission standards for most categories of nonroad engines. These engines operate in a wide variety of applications, including ag pumps and tractors.
- **In-Use Off-Road Mobile Agricultural Equipment Regulation** – ARB is currently in the process of developing and ultimately adopting a regulation to reduce emissions from in-use agricultural off-road equipment. While the emission reductions that will be achieved from this new regulation have not been quantified or accounted for in this plan, any reductions achieved through this rule will further contribute to attainment of the standard.

### **New Opportunities**

As described above, numerous efforts exist at the state, federal, and local level to reduce emissions from this category. The District's analysis of additional potential opportunities to reduce emissions from this category has yielded the following recommendations:

- Ag Electric UTV—Reinstate with a greater amount of funding for replacements.
- Ag pump electric motors—Fund utility company line extensions for farmers who otherwise would not switch from diesel to electric due to high electrification costs.
- Replacement of gasoline fueled tractors

While the District is not recommending any specific program changes targeting farm equipment as part of this plan, the District will continue to consider these and similar measures for reducing emissions whenever opportunities arise.

## Emission Inventory

Pollutant	2007	2012	2014	2015	2016	2017	2018	2019
<b><i>Annual Average - Tons per day</i></b>								
PM2.5	2.65	2.00	1.65	1.51	1.37	1.25	1.12	0.99
NOx	48.13	36.63	31.52	29.16	26.89	24.92	22.89	20.95
SOx	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
<b><i>Winter Average - Tons per day</i></b>								
PM2.5	2.07	1.56	1.29	1.18	1.07	0.97	0.87	0.77
NOx	37.66	28.66	24.67	22.82	21.04	19.50	17.91	16.40
SOx	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03

## C.10 ARB MOBILE-SOURCE RACM

Given the significant emission reductions needed for attainment in California, ARB has adopted some of the most stringent control measures nationwide for on-road and off-road mobile sources and the fuels that power them. These measures target both new and in-use equipment. And while California first focused on cleaning up cars – new car emissions have been reduced by 99 percent – the scope of California’s program is vast. The State has implemented regulations and programs to reduce emissions from freight transport equipment, including heavy-duty trucks, ocean going vessels, locomotives, harbor craft, and cargo handling equipment. In addition, the State has standards for lawn and garden equipment, recreational vehicles and boats, and other newly manufactured off-road equipment. California has also adopted many measures that focus on achieving reductions from in-use mobile sources that include accelerated replacement of older equipment with newer, less polluting equipment; more stringent inspection and maintenance requirements; and operational requirements such as truck and bus idling restrictions and speed reduction requirements for ocean going vessels.

California has unique authority under Clean Air Act section 209 to adopt and implement new emission standards for many categories of on-road vehicles and engines, and new and in-use off-road vehicles and engines. Use of this authority is subject to U.S. EPA waiving the applicable federal standard upon their finding that the standards adopted by California are, in the aggregate, at least as stringent as the comparable federal standard.

To support the attainment plans submitted to U.S. EPA in 2007 for 8-hour ozone and PM2.5, ARB undertook an extensive public consultation process to identify potential State Implementation Plan (SIP) measures. New measures developed by ARB as part of this 2007 State Strategy focused on cleaning up the in-use fleet, and increasing the stringency of emissions standards for a number of engine categories, fuels, and consumer products. These measures build on ARB’s already comprehensive program that addresses emissions from all types of mobile sources.

In 2011, U.S. EPA approved the State mobile source control program as being RACM in the context of the 2007 and 2008 South Coast and San Joaquin Valley PM2.5 plans (76 FR 69896 at 69906). In its proposed approval of the 2008 San Joaquin Valley PM2.5 Plan, U.S. EPA recognized that the “State of California has been a leader in the development of some of the most stringent control measures nationwide for on-road and off-road mobile sources and the fuels that power them” (76 FR 41338 at 41345). In the 2007 State Strategy, ARB identified and committed to propose new defined measures for the sources under its jurisdiction. Of these new measures, U.S. EPA noted that “many, if not most, of these measures are being proposed for adoption for the first time anywhere in the nation” (76 FR 41562 at 41570).

California’s comprehensive mobile source program continues to be RACM as it expands and further reduces emissions. The 2012 PM2.5 SIPs rely on additional regulations adopted since the State’s last major SIP revision in 2007. In January 2012, ARB adopted the Advanced Clean Cars program, which combines the control of

smog-causing pollutants and greenhouse gas emissions into a single coordinated package of requirements for model years 2017 through 2025. The program was developed in tandem with the federal government over several years, including a joint fact-finding process with shared engineering and technical studies. Benefits from this new program are reflected in emission inventories used in the 2012 PM<sub>2.5</sub> attainment plans.

## C.11 TRANSPORTATION CONFORMITY

Transportation conformity requirements are intended to ensure that transportation activities do not interfere with air quality progress. CAA Section 176 requires that transportation plans, programs, and projects conform to applicable air quality plans before being approved by a MPO. Conformity to an implementation plan means that proposed activities must not:

- (1) Cause or contribute to any new violation of any standard,
- (2) Increase the frequency or severity of any existing violation of any standard in any area, or
- (3) Delay timely attainment of any standard or any required interim emission reductions or other milestones in any area.

Motor vehicle emissions budgets are the mechanism for assuring that transportation planning activities conform with the SIP. A SIP analyzes the region's total emissions inventory from all sources for purposes of demonstrating Reasonable Further Progress (RFP) milestones, attainment, and/or maintenance. The portion of the total emissions inventory allocated to highway and transit vehicles in these analyses becomes the "motor vehicle emissions budget."<sup>6</sup> Budgets are set for each criteria pollutant or its precursors, and it is set for each RFP milestone or attainment year. Subsequent transportation plans and programs produced by local transportation planning processes are required to conform to the budget levels in the respective SIP.

### C.11.1 PM<sub>2.5</sub> Requirements

EPA issued a memorandum on March 2, 2012 regarding the "Implementation Guidance for the 2006 24-Hour Fine Particle (PM<sub>2.5</sub>) National Ambient Air Quality Standards (NAAQS). The memo indicates that transportation conformity is not discussed in detail and refers to previous regulations and guidance documents. In addition, the memo indicates that the "2007 PM<sub>2.5</sub> Implementation rule continues to provide appropriate guidance for SIP development. The *Final Rule* implementing the 1997 PM<sub>2.5</sub> NAAQS (72 FR 20586) addresses the types of motor vehicle emissions that must be addressed when setting transportation conformity budgets. In the *Final Rule*, EPA notes that "RFP

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<sup>6</sup> Federal transportation conformity regulations are found in 40 CFR Part 51, subpart T – Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Developed, Funded or Approved Under Title 23 U.S.C. of the Federal Transit Laws. Part 93, subpart A of this chapter was revised by the EPA in the August 15, 1997 Federal Register.

plans, attainment demonstrations, and maintenance plans must include a budget for direct PM<sub>2.5</sub> emissions, except for certain cases as described below. All PM<sub>2.5</sub> SIP budgets would include directly emitted PM<sub>2.5</sub> motor vehicle emissions from tailpipe, brake wear, and tire wear. States should also consider whether re-entrained road dust or highway and transit construction dust are significant contributors and should be included in the PM<sub>2.5</sub> budget.” (72 FR 20645). The rule goes on to state that ‘Under certain circumstances, directly emitted PM<sub>2.5</sub> from on-road mobile sources may be found an insignificant contributor to the air quality problem and NAAQS.’

The conformity rule applies for particles with aerodynamic diameter less than or equal to a nominal 2.5 micrometers (PM<sub>2.5</sub>). The precursor NO<sub>x</sub> must also be addressed unless there is a finding of insignificance.

Section 93.102(b)(2)(iv and v) of 40 CFR Part 51, subpart T identifies Volatile Organic Compounds (VOC), sulfur oxides (SO<sub>x</sub>) and/or ammonia as PM<sub>2.5</sub> precursor pollutants that must also have a motor vehicle emissions budget if deemed significant. In addition, Section 93.102(b)(3) identifies reentrained road dust from paved and unpaved roads as PM<sub>2.5</sub> emissions that must also have a motor vehicle emissions budget if deemed significant. While the applicability section of the rule does not address fugitive dust from road construction specifically, the rule does indicate that the consultation process should be used during the development of PM<sub>2.5</sub> SIPs when construction emissions are a significant contributor, so that these emissions are included in the SIP’s motor vehicle emissions budget for conformity purposes.

The rule also indicates that, as a practical matter, conformity for ammonia would not be required in California until there is an acceptable method for estimating such emissions, because a method would be needed to estimate current or future ammonia emissions for either a significance finding or SIP motor vehicle emissions budget. It is important to note that EMFAC 2011 does not estimate on-road mobile ammonia emissions. In addition, this plan indicates ammonia is abundant throughout the Valley and does not act as a limiting precursor, which means reducing ammonia is ineffective in reducing PM<sub>2.5</sub> in the Valley. Consequently, ammonia emissions are NOT included in the motor vehicle emissions budgets for conformity purposes.

The conformity rule indicates that the following criteria will be considered in making significance or insignificance findings for PM<sub>2.5</sub> precursors: the contribution of on-road emissions of the precursor to the total 2007 baseline SIP inventory; the current state of air quality for the area; the results of speciation monitoring for the area; the likelihood that future motor vehicle control measures will be implemented for a given precursor; and projections of future on-road emissions of the precursor.

In addition, significance findings for re-entrained road dust emissions will be based on a review of the following factors: the contribution of road dust to current and future PM<sub>2.5</sub> nonattainment; an area’s current design value for the PM<sub>2.5</sub> standard; whether control of road dust appears necessary to reach attainment; and whether increases in re-

entrained dust emissions may interfere with attainment. Such a review would include consideration of local air quality data and/or air quality or emissions modeling results.

### C.11.2 Assessment of Significance

Six out of eight Valley counties are projected to attain the 24-hr PM<sub>2.5</sub> standard by 2019 with adopted controls. The other two counties make significant progress towards attainment with these adopted, largely-NO<sub>x</sub>-focused controls, and additional reductions in directly emitted PM<sub>2.5</sub> results in attainment of the 24-hour standard no later than 2019 in the other counties. Motor vehicle emissions budgets for NO<sub>x</sub> and directly-emitted PM<sub>2.5</sub> emissions associated with on-road motor vehicle exhaust ARE being established.

**VOC:** On-road mobile emissions account for approximately 10% of the Valley's total VOC emissions in the budget years. The air quality modeling for this plan indicates that VOC is not a significant precursor to secondary PM<sub>2.5</sub> formation in the Valley. Accordingly, motor vehicle emissions budgets for VOC are NOT being established.

**SO<sub>x</sub>:** Onroad mobile exhaust estimates are less than 1 ton per day Valley-wide in the budget years which equates to less than 10 percent of the total SO<sub>x</sub> emissions inventory. SO<sub>x</sub> controls are focused on industrial sources, which contribute almost 80 percent of the total inventory. As a result, onroad SO<sub>x</sub> emissions are NOT included in the motor vehicle emissions budgets for conformity purposes.

**Paved Road Dust:** For this 2012 PM<sub>2.5</sub> Plan, the paved road dust direct PM<sub>2.5</sub> emission inventory is less than 10% of the Valley's total direct PM<sub>2.5</sub> emissions in the budget years. As noted in Chapter 4 and Appendix A, all geologic and construction source categories combined represent no more than 6% of the peak PM<sub>2.5</sub> concentrations measured in the Valley. While there are no "additional" fugitive dust controls included in the attainment demonstration for this plan, it is important to note that paved road dust is controlled via the PM<sub>10</sub> Plan and is evaluated as continually as part of the PM<sub>10</sub> conformity determinations. As a result, paved road dust emissions are NOT included in the motor vehicle emissions budgets for conformity purposes.

**Unpaved Road Dust:** Total unpaved road dust is less than 10% of the Valley's total direct PM<sub>2.5</sub> emissions inventory in the budget years. Local roads are a sub-part (1 of 7) of this category and are therefore considered insignificant. While there are no "additional" fugitive dust controls included in the plan, it is important to note that unpaved road dust is controlled via the PM<sub>10</sub> Plan, including the prohibition of any new local unpaved roads, and is evaluated as continually as part of the PM<sub>10</sub> conformity determinations. As a result, unpaved road dust emissions are NOT included in the motor vehicle emissions budgets for conformity purposes.

**Construction Dust:** Total construction and demolition dust is less than 5% of the Valley's total direct PM<sub>2.5</sub> emissions inventory in the budget years. Road construction



is a sub-part (1 of 5) is therefore considered insignificant. While there are no “additional” fugitive dust controls included in the plan, it is important to note that road construction dust is controlled extensively via the PM10 Plan and is evaluated as continually as part of the PM10 conformity determinations. As a result, road construction emissions are NOT included in the motor vehicle emissions budgets for conformity purposes.

### C.11.3 Conformity Budgets

This plan includes reasonable further progress demonstrations for 2014 and 2017, and attainment of the PM2.5 standard is projected by 2019. Winter annual day emissions are used in the plan, since the Valley’s exceedance days relative to the 24-hour standard occur in the winter months. Consequently, conformity budgets have been set with EMFAC 2011 for winter averages in the analysis years 2014, 2017, and 2019.

Section 93.124(e) of the federal conformity rule indicates that nonattainment areas with more than one MPO may establish motor vehicle emission budgets for each MPO in the implementation plan. As a result, County-level emission budgets are provided in this plan.

In developing the attainment demonstration for the San Joaquin Valley 24-hour PM2.5 State Implementation Plan, it was critical to reflect the impacts of the economic recession on emissions. The air quality modeling for the attainment demonstration used motor vehicle emissions generated from ARB’s emission factor model, EMFAC2011. An updated analysis of the rate of recovery from the economic recession was also incorporated for the trucking sector. The transportation conformity budgets being developed for this plan include more recent travel activity projections provided by the San Joaquin Valley MPOs for their 2013 Federal Transportation Improvement Plans (FTIPs). The emissions impact of this more recent activity data is reflected in the attainment demonstration.

**Diesel Truck Activity:** Truck activity estimates in EMFAC2011 reflect the emissions inventory presented to the ARB Board in December 2010. Since that time new information has become available on statewide diesel fuel usage as well as updated economic forecasts. The SJV truck activity estimates were updated using the same methods and data sources as in the December 2010 inventory. For example, data suggest that truck emissions will be roughly 6% lower in 2019 in the San Joaquin Valley than previously estimated in EMFAC2011. For this assessment, EMFAC2011 emissions estimates for heavy-duty trucks were adjusted to reflect this new information. This adjustment also resulted in a redistribution of VMT between heavy duty and light duty vehicle classes, to maintain the total county VMT in EMFAC2011.

In addition to changes to truck activity, staff also adjusted for decreased vehicle sales rates that are anticipated to occur given a slower truck VMT forecast. This adjustment is necessary because truck owners tend to hold on to their trucks longer during recessions and this will increase the fleet average emission rates even though total

activity is decreasing. This affect is strongest in the trough of the recession and diminishes quickly as the economic recovery takes hold. The combined impact of reductions in activity and increases in emission rates are shown in Table C-1 below.

**Table C-1 Proposed Adjustment Factors for Annual Emissions**

Year	Adjustment Factor
2009	1.000
2010	1.000
2011	0.980
2012	0.940
2013	0.939
2014	0.926
2015	0.920
2016	0.912
2017	0.921
2018	0.922
2019	0.940
2020	0.952
2021	0.953
2022	0.954
2023	0.955
2024 -2035	0.956

For all portions of the eight San Joaquin Valley counties that fall within the San Joaquin Valley Air Basin, heavy duty VMT (which includes the medium heavy duty diesel, heavy heavy duty diesel, school bus, and other bus vehicle classes) was reduced by using the factors from Table C-1 above. To maintain the same total VMT, the reduction in VMT from the heavy duty vehicle classes was distributed proportionately among the remaining vehicle classes. EMFAC2011 was re-run using the revised VMT by vehicle class distribution to produce the recession-adjusted emissions.

**Line Item Adjustments:** District and ARB control measures which reduce on-road mobile source emissions but are not included in EMFAC 2011 are included in the Plan and have been included in the conformity emission budgets. The committed control measures are consistent with the 2008 PM2.5 Plan (as revised in 2011) as approved by EPA on November 9, 2011 (effective January 9, 2012). However, the emission reductions have been modified by ARB staff to be consistent with the use of EMFAC 2011. Two additional measures have been included: 1) Prop 1B Goods Movement Emission Reduction Program (GMRP) and 2) Advanced Clean Cars (ACC).

**Table C-2 District and ARB Control Measures Reducing On-road Mobile Source Emissions**

Measure Description	Pollutants
Rule 9410(ETR)	Winter PM2.5 Winter NOx
Carl Moyer Program	Winter PM2.5 Winter NOx
AB 1493 GHG Standards	Winter PM2.5
Smog Check	Winter NOx
Prop 1B (GMRP)	Winter PM2.5 Winter NOx
Advanced Clean Cars (ACC)	Winter PM2.5 Winter NOx

While Valley-wide emission reductions are presented throughout the Plan, by-County emission reduction estimates have been estimated for inclusion in the conformity emission budgets. In general, by-County emission estimates were calculated by combining the emission reduction factors with the EMFAC 2011 on-road motor vehicle emissions estimate by-County. Table C-3 and C-4 illustrate these emission reductions. Detailed documentation supporting the conformity emission budget development is contained as an attachment to this appendix. The following provides a sample budget calculation.

**Table C-3 Example County Emission Budget Calculation (tons per winter season day)**

	PM2.5	NOx
<i>Emissions Baseline</i>		
Baseline EMFAC 2011	1.03	31.74
Rule 9410 (ETR)	0.01	0.11
Carl Moyer Program	0.01	0.03
AB 1493 GHG Standards	0.00	0.00
Smog Check	0.00	0.16
Prop 1B (GMRP)	0.03	0.84
Advanced Clean Cars (ACC)	0.00	0.00
<i>Conformity Emissions Budgets*</i>	1.0	30.7

\* Rounded up to the nearest tenth.

The budgets have been constructed to more closely align with the emissions identified in the on-road inventory, as follows:

- 1) Sum the county-by-county emissions results to get a Valleywide total
- 2) Round the Valleywide totals up to:
  - a. NOx- the nearest whole ton
  - b. PM2.5 – the nearest tenth of a ton
- 3) Disaggregate the rounded values proportional to each county's emissions

- 4) Calculate the budget by rounding each county's values to the nearest tenth ton (for both NOx and PM2.5). (i.e. use conventional rounding)

This plan update establishes subarea county emission budgets for PM2.5 and NOx for the horizon years 2014, 2017, and 2019. The conformity attachment to this appendix provides more detailed calculations.

**Table C-4 Transportation Conformity Budgets  
(tons per average annual day)**

County	2014		2017		2019	
	PM2.5	NOx	PM2.5	NOx	PM2.5	NOx
<b>Fresno</b>	1.0	30.7	0.9	24.9	0.9	21.3
<b>Kern (SJV)</b>	1.1	41.5	1.0	34.1	1.0	29.0
<b>Kings</b>	0.2	8.5	0.2	7.1	0.2	5.9
<b>Madera</b>	0.2	8.5	0.2	6.9	0.2	6.1
<b>Merced</b>	0.5	16.7	0.4	13.6	0.4	11.7
<b>San Joaquin</b>	0.6	19.4	0.6	15.7	0.6	13.5
<b>Stanislaus</b>	0.5	14.7	0.4	11.9	0.4	10.2
<b>Tulare</b>	0.4	13.9	0.4	10.6	0.4	9.3

Section 93.124 of the federal conformity rule, in particular 93.124(b), allows for the SIP to establish trading mechanisms between budgets for pollutants or precursors, or among budgets allocated to mobile and other sources. The 2008 PM2.5 Plan (as revised in 2011) included a trading mechanism, which was approved by EPA effective January 9, 2012, to be used for analysis years after 2014. This SIP allows trading from the motor vehicle emissions budget for the PM2.5 precursor NOx to the motor vehicle emissions budget for primary PM2.5 using a 8 to 1 ratio (see Chapter 9, Section 9.4).

To ensure that the trading mechanism does not impact the ability to meet the NOx budget, the NOx emission reductions available to supplement the PM2.5 budget shall only be those remaining after the NOx budget has been met. Each agency responsible for demonstrating transportation conformity shall clearly document the calculations used in the trading, along with any additional reductions of NOx or PM2.5 emissions in the conformity analysis.

**Demonstrating Transportation Conformity:** The SJV MPOs should apply the updated diesel truck activity and the appropriate line item adjustments in future conformity demonstrations. For project level conformity, unless specific vehicle fleet mix or VMT data from observed traffic counts are used, then the default fleet VMT distribution should be adjusted in the same fashion as noted above. For conformity determinations, the MPOs would still use conventional rounding on a county-by-county basis for the conformity test.

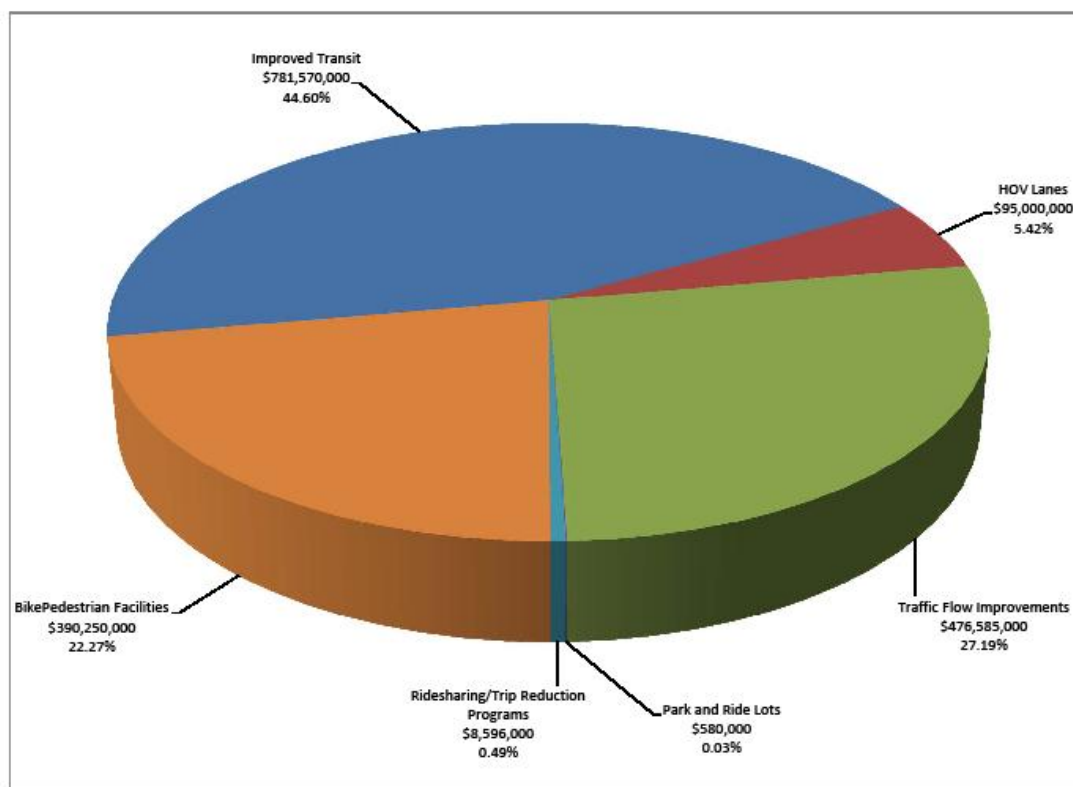
#### C.11.4 Local Reasonably Available Control Measures (RACM)

Clean Air Act Section 108(f) Transportation Control Measures are currently being implemented by the San Joaquin Valley MPOs as part of the adopted CMAQ cost effectiveness policy and the development of each Regional Transportation Plan (RTP). In addition, new transportation legislation (MAP-21) includes enhanced emphasis on funding PM2.5 projects.

The San Joaquin Valley MPOs continue to implement the adopted San Joaquin Valley CMAQ Policy which was included in the San Joaquin Valley *2007 8-Hour Ozone Plan* and *2008 PM2.5 Plan*. The CMAQ policy includes a standardized process for distributing 20 percent of the CMAQ funds to projects that meet a minimum cost-effectiveness beginning in FY2011. This policy focuses on achieving the most cost-effective emission reductions, while maintaining flexibility to meet local needs. The policy feasibility and minimum cost-effectiveness standard was revisited in 2009 as part of the 2011 FTIP development; the minimum cost-effectiveness standard was also revisited in 2012 as part of the 2013 FTIP development.

Figure C-1 provides an illustration of funding allocated valley-wide in the 2013 FTIPs for a sample of TCM categories: improved transit; high occupancy vehicle lanes; traffic flow improvements; park and ride lots; ridesharing/trip reduction programs; bicycle/pedestrian facilities. Please note these tables are not included as RACM, but are provided to demonstrate the eight SJV MPOs commitment to the implementation of TCMs throughout the Valley. As the San Joaquin Valley MPOs are implementing TCMs through the current policies, all reasonable transportation control measures are being implemented.

**Figure C-1 Illustration of San Joaquin Valley MPO Funding for Sample TCM Categories**



Each San Joaquin Valley MPO is required to update its RTP every four years. The RTP is a long range regional transportation plan that provides a vision for transportation investments throughout the San Joaquin Valley. The next RTP will also integrate land use and transportation planning to achieve regional greenhouse gas (GHG) targets set by ARB pursuant to SB 375.

The RTP contains a host of improvements to every component of the regional multimodal transportation system including:

- Active transportation (non-motorized transportation, such as biking and walking)
- Transportation demand management (TDM)
- Transportation system management (TSM)
- Transit
- Passenger rail
- Goods movement
- Aviation and airport ground access
- Highways
- Arterials
- Operations and maintenance

Included within these transportation system improvements are TCM projects that reduce vehicle use or change traffic flow or congestion conditions. TCMs include the following categories of transportation improvement projects and programs:

- Improved Transit
- High Occupancy Vehicle Lanes
- Traffic Flow Improvements
- Park and Ride Lots
- Ridesharing/Trip Reduction Programs
- Bicycle/Pedestrian Facilities

#### **C.11.5 SB 375**

The Sustainable Communities and Climate Protection Act of 2008 (Sustainable Communities, SB 375) enhances California's strategy to reduce California's Greenhouse gas emissions through the coordination of transportation and land-use to reduce vehicle miles traveled per person through the development of a Sustainable Community Strategy. SB-375 identifies specific reduction goals for each of California's Metropolitan Planning Organizations in 2020 and 2035 which the Sustainable Community Strategy must meet, if feasible. For the San Joaquin Valley the SB-375 target reductions are a 5% per capita greenhouse gas emission reduction from 2005 by 2020 and a 10% per capita greenhouse gas emission reduction from 2005 by 2035. The strategies contained in the next RTP/SCS will produce benefits for the region far beyond simply reducing GHG emissions. The SCS integrates the transportation network and related strategies with an overall land use pattern that responds to projected growth, housing needs, changing demographics, and transportation demands. As a result, Sustainable Community Strategy development is anticipated to complement the reduction strategies outlined in the *2012 PM2.5 Plan*.

**Attachment: San Joaquin Valley Draft 24-hour PM2.5 Motor Vehicle Emissions Budgets  
(tons per winter season day, \*established by conventional rounding)**

**2014 Motor Vehicle Emissions Budgets**

2013 FTIP MPO new activity data adjusted for recession

County	Fresno		Kern		Kings		Madera		Merced		San Joaquin		Stanislaus		Tulare		SJV Air Basin	
	PM2.5	NOx	PM2.5	NOx	PM2.5	NOx	PM2.5	NOx	PM2.5	NOx	PM2.5	NOx	PM2.5	NOx	PM2.5	NOx	PM2.5	NOx
Baseline EMFAC2011	1.03	31.74	1.19	43.28	0.23	8.86	0.25	8.79	0.48	17.28	0.68	20.12	0.49	15.21	0.45	14.37		
Rule 9410	-0.01	-0.11	-0.01	-0.08	0.00	-0.02	0.00	-0.03	0.00	-0.04	-0.01	-0.08	0.00	-0.06	0.00	-0.06		
Prop 1B	-0.03	-0.84	-0.06	-1.65	-0.01	-0.31	-0.01	-0.22	-0.02	-0.56	-0.03	-0.60	-0.01	-0.37	-0.01	-0.34		
Moyer	-0.01	-0.03	-0.02	-0.05	0.00	-0.01	0.00	-0.01	-0.01	-0.02	-0.01	-0.02	0.00	-0.01	0.00	-0.01		
AB 1493	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Smog Check	0.00	-0.16	0.00	-0.14	0.00	-0.03	0.00	-0.05	0.00	-0.07	0.00	-0.12	0.00	-0.10	0.00	-0.09		
ACC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
<b>Total</b>	<b>0.97</b>	<b>30.59</b>	<b>1.11</b>	<b>41.35</b>	<b>0.21</b>	<b>8.49</b>	<b>0.24</b>	<b>8.48</b>	<b>0.44</b>	<b>16.59</b>	<b>0.64</b>	<b>19.30</b>	<b>0.47</b>	<b>14.67</b>	<b>0.43</b>	<b>13.87</b>	<b>4.51</b>	<b>153.35</b>
Air Basin Total																	4.6	154
Disaggregated County Totals	0.992	30.724	1.127	41.520	0.217	8.523	0.245	8.519	0.453	16.663	0.650	19.387	0.475	14.737	0.441	13.927		
Budget*	1.0	30.7	1.1	41.5	0.2	8.5	0.2	8.5	0.5	16.7	0.6	19.4	0.5	14.7	0.4	13.9	4.5	153.9



**2017 Motor Vehicle Emissions Budgets**  
 2013 FTIP MPO new activity data adjusted for recession

County	Fresno		Kern		Kings		Madera		Merced		San Joaquin		Stanislaus		Tulare		SJV Air Basin	
	PM2.5	NOx	PM2.5	NOx	PM2.5	NOx	PM2.5	NOx	PM2.5	NOx	PM2.5	NOx	PM2.5	NOx	PM2.5	NOx	PM2.5	NOx
Baseline EMFAC2011	0.94	25.30	1.04	34.44	0.20	7.17	0.23	7.03	0.42	13.78	0.63	16.00	0.46	12.14	0.40	10.80		
Rule 9410	-0.01	-0.08	-0.01	-0.06	0.00	-0.02	0.00	-0.02	0.00	-0.03	-0.01	-0.06	0.00	-0.04	0.00	-0.04		
Prop 1B	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Moyer	-0.02	-0.09	-0.04	-0.11	-0.01	-0.02	-0.01	-0.02	-0.02	-0.04	-0.02	-0.07	-0.01	-0.04	-0.01	-0.04		
AB 1493	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Smog Check	0.00	-0.15	0.00	-0.14	0.00	-0.03	0.00	-0.05	0.00	-0.06	0.00	-0.11	0.00	-0.09	0.00	-0.08		
ACC	-0.01	-0.07	-0.01	-0.06	0.00	-0.01	0.00	-0.02	0.00	-0.03	-0.01	-0.05	-0.01	-0.05	-0.01	-0.04		
<b>Total</b>	<b>0.89</b>	<b>24.91</b>	<b>0.98</b>	<b>34.07</b>	<b>0.19</b>	<b>7.09</b>	<b>0.22</b>	<b>6.91</b>	<b>0.40</b>	<b>13.60</b>	<b>0.60</b>	<b>15.71</b>	<b>0.44</b>	<b>11.92</b>	<b>0.38</b>	<b>10.60</b>	<b>4.09</b>	<b>124.82</b>
Air Basin Total																	4.1	125
Disaggregated County Totals	0.895	24.944	0.980	34.124	0.190	7.099	0.218	6.925	0.400	13.624	0.598	15.732	0.437	11.934	0.382	10.619		
Budget*	0.9	24.9	1.0	34.1	0.2	7.1	0.2	6.9	0.4	13.6	0.6	15.7	0.4	11.9	0.4	10.6	4.1	124.8

**2019 Motor Vehicle Emissions Budgets**  
 2013 FTIP MPO new activity data adjusted for recession

County	Fresno		Kern		Kings		Madera		Merced		San Joaquin		Stanislaus		Tulare		SJV Air Basin	
	PM2.5	NOx	PM2.5	NOx	PM2.5	NOx	PM2.5	NOx	PM2.5	NOx	PM2.5	NOx	PM2.5	NOx	PM2.5	NOx	PM2.5	NOx
Baseline EMFAC2011	0.95	21.65	1.05	29.34	0.20	5.99	0.25	6.24	0.43	11.80	0.64	13.71	0.47	10.45	0.42	9.47		
Rule 9410	-0.01	-0.07	-0.01	-0.06	0.00	-0.01	0.00	-0.02	0.00	-0.03	-0.01	-0.05	0.00	-0.04	0.00	-0.04		
Prop 1B	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Moyer	0.00	-0.02	0.00	-0.03	0.00	-0.01	0.00	-0.01	0.00	-0.01	0.00	-0.02	0.00	-0.01	0.00	-0.01		
AB 1493	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	0.00	0.00	0.00	0.00	0.00		
Smog Check	0.00	-0.13	0.00	-0.11	0.00	-0.02	0.00	-0.04	0.00	-0.05	0.00	-0.09	0.00	-0.07	0.00	-0.07		
ACC	-0.04	-0.16	-0.03	-0.14	-0.01	-0.03	-0.01	-0.06	-0.01	-0.07	-0.03	-0.12	-0.02	-0.10	-0.02	-0.09		
<b>Total</b>	<b>0.90</b>	<b>21.27</b>	<b>1.01</b>	<b>29.00</b>	<b>0.19</b>	<b>5.91</b>	<b>0.23</b>	<b>6.11</b>	<b>0.41</b>	<b>11.63</b>	<b>0.60</b>	<b>13.43</b>	<b>0.44</b>	<b>10.22</b>	<b>0.40</b>	<b>9.26</b>	<b>4.18</b>	<b>106.83</b>
Air Basin Total																	4.2	107
Disaggregated County Totals	0.903	21.302	1.014	29.046	0.191	5.919	0.236	6.118	0.413	11.650	0.604	13.453	0.439	10.234	0.399	9.277		
Budget*	0.9	21.3	1.0	29.0	0.2	5.9	0.2	6.1	0.4	11.7	0.6	13.5	0.4	10.2	0.4	9.3	4.1	107.0