

Acronyms and Glossary

ACRONYMS, ABBREVIATIONS, AND INITIALISMS

AERO: Advanced Emissions Reductions Options
A.I.R: Agriculture Improving Resources
APCO: Air Pollution Control Officer
AQGGP: Air Quality Guidelines for General Plans
AQI: Air Quality Index
ARB: California Air Resources Board
BAAQMD: Bay Area Air Quality Management District
BACT: Best Available Control Technologies
CAA: Clean Air Act
CAFO: confined animal facility operations
CalTrans: California Department of Transportation
CAMx: Comprehensive Air Quality Model with Extensions
CART: Center for Advanced Research and Technology
CEM: Continuous Emission Monitoring
CEQA: California Environmental Quality Act
CCOS: Central California Ozone Study
CMAQ: Community Multiscale Air Quality
CMB: Chemical Mass Balance
CMP: Conservation Management Practices
CO: carbon monoxide
CRPAQS: California Regional Particulate Air Quality Study
CTG: Control Technologies Guidelines
DMV: Department of Motor Vehicles
DPAG: Dairy Permitting Advisory Group
District: San Joaquin Valley Air Pollution Control District
DPR: Department of Pesticide Regulation (DPR)
EPA: U.S. Environmental Protection Agency
EJ: environmental justice
ERC: emission reduction credits
FR: Federal Register
FRM: Federal Reference Method
GAMAQI: Guide for Assessing and Mitigating Air Quality Impacts
Heavy-Duty Program: Heavy-Duty Engine Emission Reduction Incentive Program
IC: internal combustion
IMS-95: 1995 Integrated Monitoring Study
ISR: Indirect Source Review
ISSRC: International Sustainable Systems Research Center
MM5: Mesoscale Model version 5
MPO: Metropolitan Planning Organization

NAAQS: National Ambient Air Quality Standards
NOx: oxides of nitrogen
OADP: Ozone Attainment Demonstration Plan (for 1-hour ozone)
OC: organic carbon
PM: particulate matter
PM2.5: particulate matter 2.5 microns or less in diameter
PM10: particulate matter 10 microns or less in diameter
PMF: positive matrix factorization
Ppm: parts per million
PSA: Public Service Announcements
PSI: Pollutant Standards Index (now the AQI)
RACT: reasonably available control technology
REMOVE : Reduce Motor Vehicle Emissions
RFP: reasonable further progress
ROP: rate of progress (for 1-hour ozone)
RRF: relative response factor
SANDWICH: measured Sulfate, Adjusted Nitrate, Derived Water, Inferred Carbonaceous mass Hybrid Material Balance Approach
SAPRC: [California] Statewide Air Pollution Research Center
SIP: state implementation plan
SJVAB: San Joaquin Valley Air Basin
SMAT: Speciated Modeled Attainment Test
SOA: secondary organic aerosol
SOx: oxides of sulfur
TOG: total organic gases
TPA: Transportation Planning Agencies
Tpd: tons per day
TSP: total suspended particles
UAM-AERO: Urban Airshed Model, modified to address aerosol chemistry
VOC: volatile organic compounds

GLOSSARY

Air Basin: An area of the state designated by the ARB pursuant to Subdivision (a) of Section 39606 of the CH&SC that has similar meteorological and geographic conditions.

Air Monitoring: The periodic or continuous sampling and analysis of air pollutants in ambient air or from individual pollutant sources.

Air Pollutants: Substances which are foreign to the atmosphere or are present in the natural atmosphere to the extent that they may result in adverse effects on humans, animals, vegetation, and/or materials.

Air Pollution Control District (APCD): A county agency with authority to regulate sources of air pollution, other than emissions from mobile sources, such as refineries, manufacturing facilities, and power plants within a given county, and governed by a District Air Pollution Control Board composed of elected county supervisors. (Compare AQMD and Unified District)

Air Pollution Control Officer (APCO): A person appointed by the APCB given the authority to appoint district personnel for the purpose of observing and enforcing the provisions of Part 4, Division 26 of the CH&SC.

Air Quality Attainment Plan (AQAP): An air quality plan prepared in approximately 1991 by each air pollution control district in the California that at that time was classified as nonattainment for specific state ambient air quality standards.

Air Quality Management District (AQMD): A group of counties or portions of counties with authority to regulate sources of air pollution within the region and governed by a regional air pollution control board comprised mostly of elected officials from within the region. An AQMD is established by state legislation. (Compare APCD and Unified District).

Ambient Air: Air occurring at a particular time and place outside of structures. Often used interchangeably with outdoor air.

Anthropogenic: Of, relating to, or influenced by the impact of humans on nature; man-made.

Area-wide Sources: Also known as "area" sources, are those sources which are not large enough to be tracked individually, but when added together can represent a large quantity of pollution. Examples of these sources include multiple stationary emission sources such as water heaters, gas furnaces, fireplaces, gas stations, dry cleaners and woodstoves. Area sources of pollution are identified by Category of Emission Source (CES) codes.

Attainment: Achieving and maintaining the air quality standards for a given standard.

Attainment Area: A geographic area that is in compliance with the National and/or California Ambient Air Quality Standards (NAAQS or CAAQS).

Best Available Control Technology (BACT): The most up to date methods, systems, techniques, and production processes available to achieve the greatest feasible emission reductions for given regulated air pollutants and processes. BACT is a requirement of NSR (New Source Review) and PSD (Prevention of Significant Deterioration).

Best Available Control Measure (BACM): A term used to describe the “best” measures (according to EPA guidance) for controlling small or dispersed sources of particulate matter and other emissions from sources such as roadway dust, woodstoves, and open burning.

Best Available Retrofit Control Technology (BARCT): An emission limitation that is based on the maximum degree of reduction achievable, taking into account environmental, energy, and economic impacts by each class or category of source (Section 40406 CH&SC).

Biogenic: Produced by living organisms. Biogenic emissions are of extreme interest because of the predominance of agriculture in the San Joaquin Valley; however, the District has no authority to regulate biogenic emissions. Preliminary studies indicate that biogenic emissions may be at least two times the total hydrocarbon emissions already quantified in the emissions inventory (in the AQAP).

Bureau of Automotive Repair (BAR): An agency of the California Department of Consumer Affairs responsible for the implementation of the motor vehicle inspection and maintenance program (smog check).

California Air Resources Board (ARB): The State's lead air quality agency consisting of an eleven-member Governor-appointed board and supporting staff fully responsible for motor vehicle pollution control, and having oversight authority over California's air pollution management program.

California Environmental Quality Act (CEQA): A California law that sets forth a process for public agencies to make informed decisions on discretionary project approvals. The process aids decision makers to determine whether any environmental impacts are associated with a proposed project. It requires the elimination or reduction of environmental impacts associated with a proposed project and the implementation of mitigation measures to reduce or remove those impacts.

Carbon Monoxide (CO): A colorless, odorless gas resulting from the incomplete combustion of fossil fuels. Over 80 percent of the CO emitted in urban areas is contributed by motor vehicles. CO interferes with the blood's ability to carry oxygen to the body's tissues and results in numerous adverse health effects. CO is a criteria pollutant.

Central California Ozone Study (CCOS): A research effort undertaken in 2001 to collect observations related to formation of ozone at the surface and aloft for a large area of central California, with supporting collection of activity and emissions data, to be followed by analysis and modeling.

Conformity: A demonstration of whether a federally-supported activity is consistent with the State Implementation Plan (SIP) – per section 176(c) of the FCAA. Transportation conformity refers to plans, programs, and projects approved or funded by the Federal Highway Administration or the Federal Transit Administration. General conformity refers to projects approved or funded by other federal agencies.

Consumer Products: Products such as detergents, cleaning compounds, polishes, personal care products, and automotive specialty products which are part of our everyday lives and, through consumer use, may produce air emissions which contribute to air pollution.

Criteria Air Pollutant: An air pollutant for which acceptable levels of exposure can be determined and for which an federal or state ambient air quality standard has been set. Examples include: Ozone, Carbon Monoxide, Lead, Nitrogen Dioxide, Sulfur Dioxide, and PM10.

Department of Motor Vehicles (DMV): The agency responsible for registering drivers and vehicles as well as collecting state and local motor vehicle fees.

Design Value: The pollutant concentration used by air quality managers as the basis for determining attainment of an air quality standard, generally by using an air quality model. The design value may or may not be the same as the designation value.

District Source: Any source for which the District has legal authority to set emissions standard and regulate the operations thereof.

Emission Factor: For stationary sources, the relationship between the amount of pollution produced and the amount of raw material processed or burned. For mobile sources, the relationship between the amount of pollution produced and the number of vehicle miles traveled. By using the emission factor of a pollutant and specific data regarding quantities of material used by a given source, it is possible to compute emissions for the source.

Emission Inventory: An estimate of the amount of pollutants emitted into the atmosphere from major mobile, stationary, area-wide, and natural source categories over a specific period of time such as a day or a year.

Emission Offset: Actual enforceable emission reductions from existing sources sufficient to offset anticipated emission increases associated with new or modified stationary sources. A rule-making concept whereby approval of a new stationary source of air pollution or increase of emissions from an existing source of air pollution is conditional on the equal or greater reduction of emissions from other existing stationary sources of air pollution. This concept is utilized in addition to reduction in emissions by employing BACT.

Emission Projecting: Utilizing information and growth and control estimates to approximate future emissions.

Emission Reduction Credit (ERC): Credits given for actual emission reductions that are real, enforceable, permanent, quantifiable, and surplus (beyond the required reduction). An actual credit is certified via a District-issued document that specifies the date of issuance, expiration date of credit, type of pollutant, and legal owner of emission reduction credits. In some cases, ERCs can be transferred to another owner or banked for future use.

Emission Standard: The maximum amount or rate of a pollutant permitted to be discharged from a polluting source such as an automobile or smoke stack.

Emissions Inventory: An estimate of the quantity of pollutants emitted into the atmosphere over a specific period such as a day or a year. Considerations that go into the inventory include type and location of sources, the processes involved, and the level of activity.

Environmental Protection Agency (EPA): The United States Environmental Protection Agency is a federal agency charged with protecting human health and safeguarding the natural environment—air, water, and land-- upon which life depends. EPA promulgates national ambient air quality standards and implements other federal programs designed to improve air quality.

Exceedance: An air pollutant that is monitored to be above the state and/or federal ambient air quality standard for that pollutant.

Federal Clean Air Act (FCAA): A federal law passed in 1970 and significantly amended in 1977 and 1990 that forms the basis for the national air pollution control efforts. Basic elements of the Act include national ambient air quality standards for major air pollutants, air toxics standards, acid rain control measures, and enforcement provisions.

Federal Clean Air Act Amendments of 1990: The 1990 amended version of the federal CAA that mandates attainment of the National Ambient Air Quality Standards (NAAQS) by specified dates for nonattainment areas. Ozone nonattainment areas are sorted into categories (marginal, moderate, serious, severe, and extreme) with deadlines established ranging from three years for marginal areas to twenty years for extreme areas.

Federal Implementation Plan (FIP): In the absence of an approved State Implementation Plan (SIP), a plan prepared by the EPA which provides measures that nonattainment areas must take to meet the requirements of the federal CAA.

Federal Motor Vehicle Control Program (FMVCP): This program establishes the tailpipe emissions standards that are implemented by the Federal Government.

Federal Source: Any source for which the United States government has legal authority to set emissions standards and regulate the operations thereof. The District does not have legal authority to set emissions standards for these sources, but may have authority to regulate their operations, or the makeup of the vehicle fleet. One example is US Postal Service fleets.

Hydrocarbon (HC): any of a large number of compounds containing various combinations of hydrogen and carbon atoms. They may be emitted into the air as a result of fossil fuel combustion and fuel volatilization, and are a major contributor to smog.

Indirect Source: Any facility, building, structure, or installation, or combination thereof, which generates or attracts mobile source activity that results in emissions of any pollutant (or precursor) for which there is a state or federal ambient air quality standard. Examples of indirect sources include employment sites, shopping centers, sports facilities, housing developments, airports, educational institutions, commercial and industrial developments, and parking lots and garages.

Indirect Source Review (ISR): A rule or regulation that governs entities such as stationary facilities, buildings, structures, properties, and/or roads which, through their construction to operation indirectly contributes to air pollution. This includes projects and facilities that attract or generate mobile sources activity (autos and trucks) such as employment sites, shopping centers, sports facilities, housing developments, airports, educational institutions, commercial and industrial developments, and parking lots and garages, that results in the emissions of any regulated pollutant.

Inspection and Maintenance Program (I & M): A motor vehicle inspection program implemented by the Bureau of Automotive Repair. It is designed to identify vehicles in need of maintenance and to assure the effectiveness of their emission control systems on a biennial basis. The program was enacted in 1979 and

strengthened in 1990. The standard program is called Basic I & M. Enhanced I & M has more stringent testing requirements and is to be implemented in urbanized areas that are classified as "serious" and above nonattainment for ozone or "high moderate" and above for carbon monoxide and which had a population of 200,000 or more in 1980. Also known as a "smog check".

Internal Combustion Engine (IC): A heat engine in which the combustion generates the heat inside the engine proper instead of in a furnace. An example of an IC engine is an automobile engine.

Inversion: A layer of warm air in the atmosphere that lies over a layer of cooler air, trapping pollutants.

Local Source: Any source for which local governments (cities and counties) have primary regulatory authority. One example is land use decisions. The District does not have the legal authority to make land use decisions, which, per state law, are under the purview of cities and counties. The District does have authority, however, to control emissions from land use projects through its Indirect Source Review program. Additionally, the District submits comments on land-use proposals received from cities, counties, and other agencies under the California Environmental Quality Act (CEQA). The District also advises cities and counties regarding air quality issues in their general plans. Section 65302.1 of California Government Code requires cities and counties in the San Joaquin Valley to amend appropriate elements of their general plans to include data, analysis, comprehensive goals, policies, and feasible implementation strategies to improve air quality in their next housing element revisions. Cities and counties are required to submit these air quality amendments to the District for comment at least 45 days before adoption.

Memorandum of Understanding (MOU): An agreement made among agencies for the purposes of jointly accomplishing a goal, program, etc. The governing boards of the involved agencies must ratify this agreement.

Mobile Sources: Sources of air pollution that are not stationary by nature, such as automobiles, motorcycles, trucks, off-road vehicles, boats, and airplanes.

National Ambient Air Quality Standards (NAAQS): Standards set by the EPA for the maximum levels of air pollutants that can exist in the ambient air without unacceptable effects on human health or the public welfare.

New Source Review (NSR): The mechanism to assure that new and modified stationary sources will not interfere with the attainment or maintenance of any ambient air quality standard, or prevent reasonable further progress towards the attainment or maintenance of any ambient air quality standard. A program used in a non-attainment area to permit or site new industrial facilities or modifications to existing industrial facilities that emit non-attainment criteria air pollutants. The

two major requirements of NSR are Best Available Control Technology and Offsets.

Nonattainment Area: An area identified by the EPA and/or ARB as not meeting either NAAQS or CAAQS standards for a given pollutant.

Oxides of Nitrogen (NO_x): A general term pertaining to compounds of nitric oxide (NO), nitrogen dioxide (NO₂), and other oxides of nitrogen. Nitrogen oxides are typically created during combustion processes and are major contributors to smog formation and acid deposition. NO₂ is a criteria pollutant, and may result in numerous adverse health effects.

Ozone (O₃): A reactive gas consisting of three oxygen atoms. In the troposphere, it is a product of the photochemical process involving the sun's energy. It is a secondary pollutant that is formed when nitrogen oxides (NO_x) and volatile organic compounds (VOC) react in the presence of sunlight. Ozone at the earth's surface causes numerous adverse health effects and is a criteria pollutant. It is a major component of smog. In the stratosphere, ozone exists naturally and shields Earth from harmful incoming ultraviolet radiation.

Ozone Attainment Demonstration Plan (OADP): A plan prepared by air pollution control districts and air quality management districts that proposes and evaluates, through modeling, emission controls deemed necessary to attain ambient air quality standards for 1-hour ozone.

Ozone Precursors: Chemicals such as volatile organic compounds and nitrogen oxides, occurring either naturally or as a result of human activities, which contribute to the formation of ozone, a major component of smog. They are emitted directly from sources into the atmosphere.

Particulate Matter (PM₁₀): A major air pollutant consisting of tiny solid or liquid particles of soot, dust, smoke, fumes, and mists. The size of the particles (10 microns or smaller, about 0.0004 inches or less) allows them to easily enter the air sacs deep in the lungs where they may be deposited to result in adverse health effects. PM₁₀ also causes visibility reduction and is a criteria air pollutant.

parts per hundred million (pphm): Standard of measurement of concentration by which ozone or other atmospheric gases may be measured. One pphm is equal to ten ppb.

parts per million (ppm): Standard of measurement of concentration by which ozone or other atmospheric gases may be measured. One ppm is equal to 100 pphm or 1000 ppb.

Photochemical Reaction: A term referring to chemical reactions brought about by the light energy of the sun. Photochemical reactions create harmful air pollutants such as ozone.

Public Workshop: A workshop held by an air district for the purpose of informing the public and obtaining its input on the development of a regulatory action or control measure by that agency.

Rate of Progress (ROP): The Federal Clean Air Act Amendments [Section 182(c)(2)] require ozone nonattainment areas designated as "serious" or above to demonstrate post-1996 volatile organic compound emission reductions of three percent per year, averaged over a 3-year period. The U.S. Environmental Protection Agency refers to these reductions as the rate-of-progress requirement.

Reactive Organic Gas (ROG): A reactive chemical gas, composed of hydrocarbon compounds that may contribute to the formation of smog by their involvement in atmospheric chemical reactions. Also sometimes referred to as Non-Methane Organic Compounds (NMOCs). VOC emissions are a subset of ROG emissions.

Regional Transportation Planning Agencies (RTPAs): The eight governmental bodies in the San Joaquin Valley primarily responsible for transportation planning in compliance with federal and state requirements. Also referred to as Valley Transportation Planning Agencies (TPAs).

Reasonably Available Control Technology (RACT): Devices, systems, process modifications, or other apparatus or techniques that are reasonably available taking into account the necessity of imposing such controls in order to attain and maintain a national ambient air quality standard; the social, environmental, and economic impact of such controls; and alternative means of providing for attainment and maintenance of such standard.

Reid Vapor Pressure (RVP): The absolute vapor pressure of volatile crude oil and volatile nonviscous petroleum liquids, except liquefied petroleum gases.

San Joaquin Valley Air Basin (SJVAB): An air basin established by ARB that has similar meteorological and geographical conditions that consist of all of San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, and Tulare Counties, and the Valley portion of Kern County.

San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD or District): Also known as the "Valley Air District". The eight member counties include Fresno, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare Counties, and the Valley portions of Kern County.

Smog: A combination of smoke, ozone, hydrocarbons, nitrogen oxides, and other chemically reactive compounds, which, under various conditions of weather and

sunlight, may result in a murky brown haze that causes adverse health effects. A primary source of smog is automobiles.

Smog Check Program: A motor vehicle inspection program implemented by the Bureau of Automotive Repair. It is designed to identify vehicles in need of maintenance and to assure the effectiveness of their emission control systems on a biennial basis. The program was enacted in 1979 and strengthened in 1990. Also known as the Inspection and Maintenance Program (I & M).

State Implementation Plan (SIP): A document prepared by each state describing existing air quality conditions and measures which will be taken to attain and maintain national ambient air quality standards.

State Source: Any source for which the State of California has legal authority to set emissions standards and regulate the operations thereof. The District does not have legal authority to set emissions standards for these sources, but may have authority to regulate their operations, or the makeup of the vehicle fleet. Examples include school bus fleets and other state vehicles.

Stationary Sources: Non-mobile sources such as power plants, refineries, and manufacturing facilities that emit air pollutants.

Transportation Control Measure (TCM): Any control measure to reduce vehicle trips, vehicle use, vehicle miles traveled, vehicle idling, or traffic congestion for the purpose of reducing motor vehicle emissions. TCMs can include encouraging the use of carpools and mass transit.

Transportation Planning Agency (TPA): See Regional Transportation Planning Agency.

Unified Air Pollution Control District: A specialized APCD in which two or more contiguous counties merge their county districts into one. A unified district is formed by action of the member counties. The San Joaquin Valley Unified Air Pollution Control District is a Unified District pursuant to Division 26, Part 3, Chapter 11 of the CH&SC. (Compare APCD and AQMD)

United States Environmental Protection Agency (EPA): The United States agency charged with setting policy and guidelines, and carrying out legal mandates for the protection of national interests in environmental resources.

Valley: All references to the "Valley" in this plan refer to the San Joaquin Valley.

Valley Transportation Planning Agencies (TPAs): The eight governmental bodies in the San Joaquin Valley primarily responsible for transportation planning in compliance with federal and state requirements. Also referred to as Regional Transportation Planning Agencies (RTPAs).

Vehicle Miles Traveled (VMT): A measure of both the volume and extent of motor vehicle operation; the total number of vehicle miles traveled within a specified geographical area over a given period of time.

Volatile Organic Compounds (VOC): Hydrocarbon compounds that exist in the ambient air. VOCs contribute to the formation of smog and/or may themselves be toxic. VOC emissions are a major precursor to the formation of ozone. VOCs often have an odor, and some examples include gasoline, alcohol, and the solvents used in paints.