

Air Quality Terms and Abbreviations

Air Quality Conformity – Conformity demonstrates that future transportation projects created emissions will be less than the budget or baseline. Conformity is a series of calculations, using transportation data and EPA’s emissions model (currently MOVES_2014a).

Air Quality Index (AQI) – An index for reporting daily air quality that characterizes air pollution levels and associated health effects that might be of concern. EPA calculates the AQI for five criteria pollutants. AQI values range from 0 to 500; the higher the AQI value, the greater the level of air pollution and the greater the health concern. AQI values below 100 are generally thought of as good to moderate. When AQI values are above 100, air quality is considered to be unhealthy. When AQI values are above 300, air quality is considered to be hazardous.

Attainment Area – A geographic area in which levels of a criteria air pollutant meet or exceed the health-based primary standard (national ambient air quality standard, or NAAQS). Any area may have an acceptable level for one air pollutant, but may have unacceptable levels for others.

Baseline – The year designated by EPA to be used as a comparison for future conformity analysis. The 2008 8-hour ozone standard uses 2011 as the baseline year. The 2012 PM_{2.5} standard uses 2014 as the baseline year.

Carbon Monoxide (CO) – A criteria air pollutant. A colorless, odorless, poisonous gas, produced by incomplete burning of carbon-based fuels, including gasoline, oil, and wood.

Clean Air Act (CAA) – The Clean Air Act was initially passed in 1963, but current national air pollution control program is based on the 1970 version of the law. The 1990 Clean Air Act Amendments are the most far-reaching revisions of the 1970 law.

Cold Start – When first starting a vehicle, the emission rate of pollutants such as carbon monoxide and hydrocarbons can be significantly higher during the first 505 seconds of vehicle operation compared with the emission rate after the vehicle has warmed up.

Conformity Lapse – Means that the conformity determination for a transportation plan has expired, and thus there is no currently conforming plan. During a conformity lapse, FHWA and FTA can only make approvals or grants for project that are exempt from the conformity process or are transportation control measures (TCMs) that are included in approved SIP.

Conformity Lapse Grace Period – Allows an additional 12 months from a missed conformity deadline for the area to correct the problem before a conformity lapse occurs.

Congestion Mitigation & Air Quality Improvement Program (CMAQ) – A categorical Federal-aid funding program that directs funding to projects that contribute to meeting the National Ambient Air Quality Standards.

Criteria Air Pollutant – One of six principle air pollutants determined to be hazardous to human health and regulated under EPA's NAAQS. The six criteria air pollutants are carbon monoxide, lead, nitrogen oxides, ozone, sulfur oxides, and particulate matter. The term "criteria pollutants" derives from the requirement that EPA must describe the characteristics and potential health and welfare effects of these pollutants. It is on the basis of these criteria that standards are set or revised.

EPA Region – 10 EPA geographic divisions, each responsible for executing the Agency's programs within a specific group of states and territories. Kentucky is located in Region 4.

Exceedance – A measured level of an air pollutant higher than the NAAQS.

Federal Highway Administration (FHWA) – A federal agency under the United States Department of Transportation.

Greenhouse Gases (GHGs) – Any gas that absorbs infrared radiation in the atmosphere.

Highway Performance Management System (HPMS) – A program developed by FHWA to inventory the Vehicle Miles Traveled (VMT) statewide and project future travel. Division of Planning develops the annual submittal to FHWA.

Hydrocarbons (HC) – A result when unburned or partially burned fuel is emitted from the engine as exhaust, and also when fuel evaporates directly into the atmosphere. Hydrocarbons also react with nitrogen oxides in the presence of sunlight to form ozone (O₃), also known as Volatile Organic Compounds (VOC).

Isolated Rural Nonattainment and Maintenance Areas – Areas that do not contain or are not part of any metropolitan planning area as designated under the transportation planning regulations. Projects in such areas are instead included in the Statewide Transportation Improvement Program (STIP) and Statewide Long Range Plan.

Kentucky Division for Air Quality (KY DAQ) – Is a section of the state's Energy and Environmental Cabinet (EEC).

Lead – A criteria air pollutant. A gray-white metal that is soft, malleable, ductile, and resistant to corrosion. Sources of lead resulting in concentrations in the air include industrial sources and crustal weathering of soils followed by fugitive dust emissions.

Long-Range Transportation Plan (L RTP) – A document resulting from regional or statewide collaboration and consensus on a region or state's transportation system, and serving as the defining vision for the region's or state's transportation systems and services. In metropolitan areas, the plan indicates all of the transportation improvements scheduled for funding over the next 20 years.

Maintenance Area – A geographic area of the United States previously designated nonattainment pursuant to the CAA Amendments of 1990 and subsequently redesignated to attainment subject to the requirement to develop a maintenance plan under section 175A of the CAAA.

Maintenance Plan – Areas that have been designated as nonattainment, but have since demonstrated that they are meeting the standard, can be redesignated by EPA as “attainment with an approved maintenance plan.” The maintenance plan must show how the area will continue to meet the standard and must contain “budgets” or maximum mobile source emissions for future years for the pollutants in question.

Metropolitan Planning Organization (MPO) – An organization designated by the Governor responsible for transportation planning in an urbanized area. It serves as the forum for cooperative decision making by principal elected officials of local government. The Governor designates a MPO in every urbanized area with a population of over 50,000 people.

Metropolitan Transportation Plan (MTP) – The official intermodal transportation plan that is developed and adopted through the metropolitan transportation planning process for the metropolitan planning area. See Long Range Transportation Plan.

Mobile Source – Vehicles, engines, and other machines that move, such as cars, boats, and lawnmowers are collectively known as mobile sources. Mobile sources are further divided into on-road and non-road. Regulations differ for the two categories.

Motor Vehicle Emissions Budget (MVEBs) – The portion of the total allowable emissions defined in the submitted or approved SIP or maintenance plan for a Maintenance area reasonable further progress milestones or demonstrating attainment or maintenance of the NAAQS, for any criteria pollutant or its precursors, allocated to highway and transit vehicle use and emissions. KYTC works with DAQ to develop 8-hour ozone and PM_{2.5} budgets.

National Ambient Air Quality Standards (NAAQS) – Standards established by EPA that apply to outdoor air throughout the country. The Clean Air Act established two types of national air quality standards. Primary standards set limits to protect public health, including the health of “sensitive” populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings. EPA has set NAAQS for the six criteria pollutants.

Nitrogen Oxides (NO_x) – A criteria air pollutant. Nitrogen oxides are produced from burning fuels, including gasoline and coal. Nitrogen oxides are smog-formers, which react with volatile organic compounds to form smog. Nitrogen oxides are also major components of acid rain.

Nonattainment Area – A geographic area in which the level of a criteria air pollutant is higher than the level allowed by the federal standards. A single geographic area may have acceptable levels of one criteria air pollutant but unacceptable levels of one or more other criteria air pollutants; thus, an area can be both attainment and nonattainment at the same time.

Non-Road Emissions - Pollutants emitted by a variety of non-road sources such as farm and construction equipment, gasoline-powered lawn and garden equipment, power boats and outboard motors.

On-Road Emissions - Vehicles that are intended by their manufacturer for use on public highways. On-road vehicles must be certified by their manufacturer with the U.S. Department of Transportation (DOT), National Highway Traffic Administration (NHTSA), as compliant with on-highway safety standards as well as certified to all applicable U.S. EPA on-road emission standards. Compliance with these standards is indicated by separate safety and emissions labels on the vehicle.

Ozone (O₃) – A criteria air pollutant. A gas which is a variety of oxygen. The oxygen gas found in the air consists of two oxygen atoms stuck together; this is molecular oxygen. Ozone consists of three oxygen atoms stuck together into an ozone molecule. Ozone occurs in nature; it produces the sharp smell you notice near a lightning strike. High concentrations of ozone gas are found in a layer of the atmosphere--the stratosphere--high above the Earth. Stratospheric ozone shields the Earth against harmful rays from the sun, particularly ultraviolet B. Smog's main component is ozone; this ground-level ozone is a product of reactions among chemicals produced by burning coal, gasoline and other fuels, and chemicals found in products including solvents, paints, hair sprays, etc.

Particulates/Particulate Matter (PM) – A criteria air pollutant. Solid particles or liquid droplets suspended or carried in the air. PM₁₀ refers to particles in the atmosphere with a diameter of less than ten or equal to 10 micrometers. PM_{2.5} refers to smaller particles in the air (i.e., less than or equal to 2.5 micrometers in diameter).

Parts Per Million (PPM) - A measure of an air pollutant concentration.

State Implementation Plan (SIP) – A detailed document of the programs a state will use to carry out its responsibilities under the Clean Air Act. State implementation plans are collections of the regulations used by a state to reduce air pollution. The Clean Air Act requires that EPA approve each state implementation plan. Members of the public are given opportunities to participate in review and approval of state implementation plans.

State Transportation Improvement Program (STIP) – A multi-year, statewide, intermodal program of transportation projects, consistent with the statewide transportation plan and planning processes as well as MTPs, TIPs, and processes.

Sulfur Dioxide (SO₂) - A criteria air pollutant. Sulfur dioxide is a gas produced by burning coal, most notable in power plants. Some industrial processes, such as production of paper and smelting of metals, produce sulfur dioxide. Sulfur dioxide is closely related to sulfuric acid, a strong acid. Sulfur dioxide plays an important role in the production of acid rain.

Transportation Improvement Program (TIP) – A document prepared by a metropolitan planning organization that lists projects to be funded with FHWA/FTA funds for the next one- to three-year period.

United States Environmental Protection Agency (U.S. EPA) – A federal agency established to coordinate programs aimed at reducing pollution and protecting the environment.