GLOSSARY OF AIR QUALITY TERMS

8-hr Ozone Standard – Part of the National Ambient Air Quality Standards (NAAQS), setting a threshold ozone concentration of 0.075 ppm averaged over any eight-hour period. To attain the ozone NAAQS, the 3-year average of the annual 4th-highest daily maximum 8-hour ozone concentration must be less than or equal to 0.075 ppm.

Alternative Commutes – Any method of land-based travel that reduces emissions by avoiding trips in single-occupant vehicles. Alternative commuting includes telework, carpools, vanpools, mass transit, compressed work weeks, walking and biking.

Alternative Fuels – Fuels that can replace gasoline or diesel to increase energy efficiency and reduce pollution, including compressed natural gas, ethanol, liquified petroleum gas, and electricity.

AFV – Alternative fuel vehicle. Vehicles which operate on alternative fuels, whether as a sole energy source or with gasoline or diesel.

AQI - Air Quality Index. U.S. EPA's color-coded, health-based, index for reporting levels of air pollution.

Anthropogenics – Emissions resulting from human activities, such as those from vehicles or manufacturing.

Area Sources – Small facilities emitting less than 10 tons per year of pollutants, including dry cleaners, some household activities, print shops, and auto body shops.

Attainment – Status given to an area where levels of all criteria air pollutants are within federal limits as defined by the NAAQS.

Base Case -- Photochemical modeling scenario used to replicate a high-ozone episode and evaluate the performance of the model.

Biogenics – Emissions resulting from biological activity, such as those from plant material, crops, or soils. Many plant types are emitters of VOCs.

CAA – Clean Air Act. The foundation for national efforts to maintain and improve air quality is based in the Clean Air Act of 1970. Substantive revisions to the CAA were enacted in 1990; reference to CAA generally indicates the Clean Air Act Amendments of 1990.

CAMS – Continuous Air Monitoring Systems. CAMS equipment continually measures atmospheric pollutants. Systems are identified by number; for example, the monitor in far northwest Travis County is CAMS 38.

CMAQ – Congestion Mitigation and Air Quality. CMAQ funding is available to nonattainment areas through the federal Department of Transportation for projects that improve air quality and reduce traffic congestion.

CNG – Compressed Natural Gas. Natural gas condensed under high pressure that expands when released for use as a fuel.

Control Techniques, Measures and Strategies – Equipment, processes, or actions used to reduce air pollution. *Techniques* and *measures* typically refer to single actions; *strategies* generally refer to bundles of measures that collectively improve air quality. (Used interchangeably with **Emissions Reduction Strategie**s)

Criteria Air Pollutants – The Clean Air Act of 1970 identified six criteria pollutants (ozone, lead, carbon monoxide, sulfur dioxide, nitrogen oxides and particulate matter) which can negatively affect human health and the environment. The NAAQS define maximum allowable levels for these criteria pollutants.

Design Value – The monitored pollutant level used to determine an area's attainment status. For ozone, the design value is calculated by averaging the fourth-highest recorded ozone concentration at a single monitor over three consecutive years.

EI – Emissions Inventory. The EI is a detailed actual or projected accounting of pollutants and their sources for a region.

Emissions – release of pollutants into the air from a source.

Emissions Reduction Measures and Strategies – Equipment, processes, or actions to reduce air pollution. *Measures* typically refer to single actions; *strategies* to bundles of measures that improve air quality. (Used interchangeably with **Control Strategie**s)

Exceedance – One measured occurrence of ozone concentrations above the standards set forth in the NAAQS

Future Case—Projected population data and emissions reductions applied to the photochemical modeling simulation to indicate the impact of transport emissions, local emissions and main source contributors.

Grade Separations — Overpasses, which reduce congestion and associated emissions by allowing traffic to move through one intersection in multiple directions without impeding traffic flow.

HDDV—Heavy-duty diesel vehicles with gross vehicle weight (GVW) above 8,500 lbs.

HOV Lane – High Occupancy Vehicle Lane; lanes designated for use only by vehicles with 2 or more passengers. HOV lanes are used to encourage carpooling, vanpooling and mass transit.

I/M Program – Motor vehicle inspection and maintenance program. Periodic inspections determine if a vehicle's emissions control systems are working properly, and that pollution is minimized. Typically performed with the state safety inspection, I/M Programs ensure that vehicles failing inspection are repaired.

Idling – The operation of a vehicle's engine while the vehicle is not in motion. Since engine operation creates pollution, eliminating unnecessary idling can improve air quality. Generally, anti-idling initiatives do not target vehicles waiting in traffic, but those running the motor for temperature control, waiting for passengers, making deliveries, etc.

Intersection Improvements — Transportation projects that reduce intersection congestion and associated emissions by adding turn lanes or similar flow improvements.

ITS – Intelligent Transportation System. A system of detection loops and other systems that monitor traffic flow and inform drivers about lane closures and estimated length of traffic delays.

LNG – Liquified Natural Gas. Natural gas that has been condensed to a liquid, typically by cryogenic cooling.

LPG – Liquified Petroleum Gas. Also called propane, a hydrocarbon and colorless gas found in natural gas and produced from crude oil, used principally as a home heating or motor vehicle fuel.

Mobile Sources – moving objects that release pollution; mobile sources include cars, trucks, buses, planes, trains, motorcycles, and gasoline-powered lawn mowers. Mobile sources are divided into two groups: on-road vehicles (cars, trucks, and buses) and non-road (trains, planes, lawn mowers).

MSA – Metropolitan Statistical Area. An area defined by the U.S. Census Bureau as one or more adjacent counties around a central city with 50,000+ population. Counties are included in the MSA based on commuting patterns and level of urbanization.

NAAQS – National Ambient Air Quality Standards. Limits on levels of criteria air pollutants set by the U.S. EPA based on health and environmental effects.

New Source Review – Part of the air quality permitting process for new major facilities to ensure that a new operations do not contribute significantly to air quality deterioration.

NOx – Nitrogen oxides. Produced from burning fuels, including gasoline and coal, nitrogen oxides react in sunlight with volatile organic compounds to form ground-level ozone.

Nonattainment – Status assigned to areas where levels of a criteria air pollutant exceed federal standards (NAAQS).

Non-Road Sources – Emission sources from vehicles and equipment not traveling on roadways. Non-road sources are a category of mobile sources and include aircraft, marine vessels, trains, and equipment such as lawn mowers and leaf blowers.

Offset – A method used in the 1990 Clean Air Act to give major sources in nonattainment areas flexibility in meeting pollution reduction requirements. When production processes are altered to increase releases of a criteria pollutant, the source must obtain an offset by reducing a slightly greater amount of that pollutant at that plant or by "trading" offsets with another location or company.

On-Road Sources – Emission sources from vehicles traveling on roadways; a category of mobile sources that includes cars, trucks, buses, motorcycles and light- and heavy-duty diesel trucks.

Ozone – Ozone (O3) is formed when oxygen (O2) and other compounds (NOx and VOC) react in sunlight. In the upper atmosphere, ozone protects the earth from the sun's ultraviolet rays. Although beneficial in the upper atmosphere (where it protects the earth from the sun's ultraviolet rays), ground-level ozone is a respiratory irritant and major component of smog.

Ozone Action Day – A day when ozone levels in a region are predicted to reach an AQI value considered unhealthy for sensitive groups. TCEQ forecasts Ozone Action Days based on meteorological conditions; notifications are issued in the afternoon of the day preceding an Ozone Action Day. These are sometimes called Ozone Watch days. TCEQ issues an Ozone Warning when real-time data shows an actual high ozone reading.

Ozone Episode – A period of 3-4 consecutive days of measured high ozone levels. Meteorological conditions for the episode provide the base case for future modeling and examination of emission reduction impacts.

Particulate Matter – Dust, soot, and other tiny bits of solid materials that are released into and move around in the air. Particulate matter sources include burning of diesel fuels, road construction, and industrial processes. Particulates 10 microns or less in diameter (approximately seven times smaller than human hair) are classified as PM10. PM2.5 is potentially more hazardous and is defined as particulate matter smaller than 2.5 microns.

Photochemical Modeling – Computer simulations used to predict ozone formation.

Point Sources – Large, stationary sources of emissions that have specific locations and release pollutants in quantities above an emission threshold.

PPB -parts per billion

PPM -parts per million

Precursors -- Emissions which combine in the atmosphere to form other pollutants. In air quality terms, the phrase most often refers to VOC and NOx, which combine under certain atmospheric conditions to form ground-level ozone.

Remote Sensing – A technology that identifies high-polluting vehicles ("gross emitters"). Equipment shoots a beam across the tailpipe emission while the vehicle is traveling and analyzes the emission components. Programs vary: some use roadside signs to notify motorists of their emissions level, others photograph license plates to enforce repair of failing vehicles.

Resource Conservation – Includes the recycling, reuse, or reduced use of materials, water and energy.

SIP – State Implementation Plan. A detailed description of the programs a state will use to fulfill its Clean Air Act responsibilities.

Signal Improvements – Synchronizing, adding, and retiming traffic signals to reduce congestion and emissions.

Smog – A mixture of pollutants, principally ground-level ozone, produced by chemical reactions in the air. Smog can harm health, damage the environment, and cause poor visibility.

Source – Any place or object from which pollutants are released. Sources that move around (cars, trucks, planes) are categorized as mobile sources. Sources, such as power plants, factories, that do not move around are referred to as stationary sources. Mobile source categories include on-road and non-road. Stationary source categories are area, point, and biogenic sources.

Stage 1 Vapor Recovery – Equipment which traps gasoline vapors during the filling of underground gasoline storage tanks and prevents emission of these vapors to the atmosphere.

Stage 2 Vapor Recovery – Equipment affixed to gas pump nozzles that will minimize release of gasoline vapors to the atmosphere during the refueling process.

Stationary Source – A place or object from which pollutants are released and which does not move around. Stationary sources include power plants, gas stations, incinerators, houses, etc.

TERMs – Transportation Emission Reduction Measures.

TERP – The Texas Emissions Reduction Plan, established by the Legislature in 2001 as a comprehensive set of incentive programs (grant funding, financial incentives) to improve air quality in Texas.

Traffic Flow Improvements – Non-intersection measures to reduce congestion, such as adding or widening lanes, creating merge lanes and improving ramps.

Violation – Repeated exceedances of pollutant concentrations; an area is in violation of the NAAQS when it has failed to meet the specific attainment criteria for a given pollutant.

VMT – Vehicle Miles Traveled; a measure used in transportation planning to predict need for system improvements and gauge potential improvements in air quality.

VOC – Volatile Organic Compounds. Volatile organic chemicals produce harmful vapors and include gasoline, industrial chemicals (benzene), and solvents such as toluene and xylene. VOCs combine with NOx in sunlight to produce ground-level ozone