

OZONE NONATTAINMENT OVERVIEW

prepared by the Texas Commission on Environmental Quality's Air Quality Division

The purpose of this document is to explain the potential effects that ozone nonattainment may have on the general public in Texas based on currently available information. While Texas air quality has dramatically improved over the past decade because of the requirements on and the actions and sacrifices of citizens and industry, the ongoing development of new federal air quality rules will continue to impact the daily lives of many Texans.

What is Ozone?

Ozone is present both in the Earth's upper atmosphere and at ground level. The ozone high in the atmosphere protects the Earth from potentially damaging radiation from the sun. Ground-level ozone, however, is a pollutant. At high concentrations it is harmful to breathe and can damage crops, trees, and other vegetation.

Unlike other pollutants, ozone is not directly emitted from tailpipes or smokestacks. It is created through a complex chemical reaction between nitrogen oxides (NO_x) and volatile organic compounds (VOC) in the presence of heat and sunlight. NO_x is emitted primarily from man-made activities, such as using fossil fuels in industrial processes or driving a car. VOC emissions can occur naturally from trees and plants; and they can come from gasoline vapors and commercial and industrial activities. Thus, we have to reduce ozone formation by controlling NO_x and/or VOC emissions.

What is the ozone standard?

Federal law requires the United States Environmental Protection Agency (EPA) to establish standards for ozone and other criteria pollutants. These standards must be reviewed every five years. The standards are intended to protect the public and vegetation from the harmful effects of pollutants like ozone.

Additionally, the EPA is required to "classify" areas that do not meet the standards as marginal, moderate, serious, severe, or extreme, depending on the severity of the problem. Certain programs are required depending on an area's classification.

On January 6, 2010, EPA proposed to lower the eight-hour primary ozone National Ambient Air Quality Standard (NAAQS) to a level within the range of 0.060-0.070 parts per million (ppm) from a level of 0.08 ppm. One ppm is approximately the equivalent one minute in 1.9 years or one inch in 15.8 miles. The EPA also proposed a distinct cumulative, seasonal secondary ozone standard within the range of 7 to 15 ppm-hours. The EPA is expected to issue final standards by August 31, 2010. The stricter standards will result in a number of new areas in Texas being designated as "ozone nonattainment areas."

What does all this mean?

The 1990 Federal Clean Air Act Amendments require certain rules for areas designated nonattainment for the ozone standard, with more stringent requirements for areas with more serious air quality problems. These rules, for example, require limitations on emissions from industry and gas stations. Federal, state, and local authorities must also make sure that proposed transportation and other construction projects do not worsen air quality.

The State is responsible for developing and submitting a plan incorporating the necessary federally required emissions reduction levels as well as any other controls needed for achieving and maintaining the NAAQS. Some of these controls are implemented by the State, while others are handled at the

local level. Additionally, measures are tailored to the needs of a particular nonattainment area, while others are implemented statewide.

The State evaluates options, including reductions from industry and those that may affect individuals, in order to achieve the Federal ozone standards. Whatever is ultimately required, however, is determined only after rigorous scientific analysis and the participation of elected leaders, regulated businesses, and the general public.

An example of a federally required program that directly affects the general public is vehicle inspection and maintenance, which is required in nonattainment areas classified as moderate ozone nonattainment or above in 1990 Census-defined urbanized areas with a population of 200,000 or more. If only vehicles model-year 1996 and newer are inspected, the motorist's cost per inspection is estimated to be \$16. If the motorist's vehicle fails an inspection, the average emissions-related repair is currently \$606. The Texas Commission on Environmental Quality implements the Drive A Clean Machine Program, which can provide financial support to individuals meeting income requirements for either purchasing a new vehicle or repairing a vehicle that fails an emissions test. Nonattainment areas can elect to participate in the Drive A Clean Machine Program.

Mobile emissions (on-road and non-road vehicles) represent over half the NO_x emissions and more than twice the NO_x and VOC emissions from industrial point sources statewide. This represents a significant challenge given that there are primarily only four ways to reduce mobile emissions: cleaner burning engines, cleaner burning fuels, fewer vehicle-miles-traveled, or fewer hours of engine idle times. The Federal government is responsible for engine emission standards and to a large extent the fuels used. Texas has a voluntary incentive program, the Texas Emission Reduction Plan program, to help replace older diesel engines with newer, cleaner burning engines and uses the inspection and maintenance program where required. Texas also has cleaner diesel fuel requirements in the current ozone nonattainment areas. Minimizing miles traveled and/or engine idling through mandatory requirements is challenging and could have an impact on lifestyle and personal choices.

What happens if the State doesn't submit a State Implementation Plan or meet the standards?

The EPA could impose restrictions on economic growth and highway funding. The EPA could also implement its own plan, called a Federal Implementation Plan.