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# Federal Compliance Issues Heat Up

The Environmental Protection Agency has delayed action on proposed air cleanup plans for the Houston and Dallas-Fort Worth areas, waiting to see what the state does about funding incentives to reduce emissions.

## Deadline nears for complying with 1-hour ozone standard

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Ground-level ozone is an air pollutant that can cause health problems, even at relatively low levels, and damage crops and other vegetation. It is a key ingredient of urban smog. Long-term exposure to high concentrations of ozone could cause permanent lung damage.

For more than a decade, the TCEQ has worked with federal authorities, the Legislature, local governments, regulated entities, and the public to devise pollution control strategies for some of the state's largest urban areas.

Texas' strategies to address air quality are contained in its State Implementation Plan. A SIP requires an analysis of the air quality of each state and strategies for achieving and maintaining compliance with federal standards within the deadlines.

The TCEQ has worked at length to formulate a SIP that addresses the individual needs of each region in Texas and is rigorous enough to satisfy federal clean air standards. Still, the air picture grows increasingly complex. The state is facing major issues with regard to approval of the SIP for the areas of Houston, Dallas-Fort Worth, and Beaumont-Port Arthur.



This view of the Houston skyline was captured thousands of times by a fixed camera operating from July 2001 to January 2002. Pictures taken every 15 minutes were compared with data gleaned from TCEQ pollution monitors. Some days began with the downtown clearly visible (above), but later enveloped in a haze.

The Environmental Protection Agency's current standard limits ozone concentrations in any 1-hour period to 125 parts per billion. If an air monitor records concentrations above that amount more than three times in any consecutive three-year period, the affected area can be classified as being in nonattainment for federal air quality standards and therefore subject to additional regulation.

The major challenges of each area in violation of the 1-hour ozone standard are as follows:

**Houston-Galveston.** The Houston area is host to one of the country's largest industrial complexes. Those industrial and petrochemical operations, combined with high-volume freeway traffic, produce a complex ozone pollution picture that continues to be studied by research scientists.

Meteorological patterns in the Gulf of Mexico also come into play.

**Dallas-Fort Worth.** Emissions problems in the fast-growing Metroplex stem chiefly from the escalating number of cars, trucks, and diesel construction equipment.

**Beaumont-Port Arthur.** Local emissions in this port hub are generated primarily from a concentration of oil refineries and marine vessels, supplemented by heavy-duty trucks and construction equipment.

El Paso also is classified as nonattainment for ozone and two other pollutants (carbon monoxide and particulate matter), but improvements in air quality may result in the area being redesignated as attainment. El Paso is not only affected by its own car and truck emissions but also has to cope with seasonal temperature inversions and a variety of emissions from its urban neighbor, Juárez.

## Incentives Fall Short

A loss of state funds earmarked to address air quality has jeopardized EPA's approval of the SIP in the Houston and Dallas-Fort Worth areas.

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After several of the TCEQ's clean air strategies for Houston were challenged in court, the 2001 legislative session produced an ambitious new program, the Texas Emissions Reduction Plan (TERP), to provide incentives for reducing nitrogen oxide (NOx) emissions from diesel engines. Participants would receive grants and rebates for using cleaner-burning engines, fuels, and other technologies.

The TCEQ was authorized to issue incentive grants for emission-reduction projects proposed in 38 counties, all of which are nonattainment or near-nonattainment for the 1-hour ozone standard. The grants would help pay for leases and purchases of new cleaner-burning off-road equipment, such as bulldozers and paving equipment. Grants would also be used for retrofits of heavy-duty on-road vehicles and off-road equipment, purchase and use of emissions-reducing fuels, infrastructure for alternative fuels, electric infrastructure for electric vehicles and equipment, and new technology demonstrations.

In addition, the TCEQ's heavy-duty vehicle lease or purchase incentive program was to be available statewide and provide rebates for the purchases and leases of new, cleaner on-road heavy-duty vehicles, such as buses and garbage trucks.

The TERP was supposed to be funded with about \$137 million a year, drawn from several sources, primarily a new registration fee on vehicles brought into Texas from out of state. However, the registration fee was overturned in court in 2001, leaving the TERP with only about 20 percent of its expected revenues.

With the reduced funding, the TCEQ has awarded and entered into contracts for 39 grants totaling an estimated \$13.3 million. The agency expects to award another \$14 million in grants by August 31, the end of the fiscal year.

### SIP Still Evolving

With much of the state strategy relying on incentives, the TERP was a key component in the plan to achieve compliance with federal air quality standards. But, if funding is not restored in 2003, EPA officials have declared they will issue a "failure to implement" decree for the Houston-Galveston plan and a "disapproval" for the Dallas-Fort Worth plan.

Meanwhile, the TCEQ recently revised the Houston-area clean air plan to include strict limits on certain highly reactive chemicals that scientists believe accelerate ground-level ozone formation. Limits on four of these chemicals apply in Harris County, and on two chemicals in the surrounding nonattainment counties.

The SIP revision includes a requirement that industrial facilities in the eight-county area reduce NOx emissions by 80 percent overall (compared to the previous 90 percent) and make significant reductions in certain volatile organic compounds.

The revision stems from findings that in the region's complex airshed, particularly along the Houston Ship Channel, spikes in ozone levels are caused by the combination of NOx emissions and the compounds of ethylene, propylene, 1,3 butadiene, and butenes.

The TCEQ's regulation of these emissions will affect about 150 facilities in the metropolitan area, home to the largest plastics manufacturing complex in the country.

Much of the data used to develop the SIP revision was gathered during the Texas 2000 Air Quality Study, a comprehensive research project conducted in August and September 2000.

The study involved more than 300 scientists and engineers from the TCEQ, EPA, and 40 other state and national research organizations. The TCEQ has analyzed more than 64,000 hours of air monitoring data and 600 air samples from specialized aircraft monitoring.

### A New Wrinkle

In addition to the TERP funding, the TCEQ has a new challenge in dealing with the Dallas-Fort Worth and Beaumont-Port Arthur areas.

In recent years, the compliance deadlines for both areas were extended to 2007, based on EPA's "transport policy." This policy allows an extension of an area's compliance deadline if the area's ability to meet the ozone standard is affected by the transport of pollutants from an upwind area.

In late 2002, a federal appeals court declared the transport policy to be invalid. The ruling has cast doubt on what the nonattainment status and compliance deadlines should be for Dallas-Fort Worth and Beaumont-Port Arthur.

The TCEQ is working with EPA to resolve these issues and develop SIP revisions needed to comply with the federal standards.

Metropolitan Area	Population (in millions)
Houston-Galveston	4.7
Dallas-Fort Worth	4.6
Beaumont-Port Arthur	.4
El Paso	.7
<b>Total</b>	<b>10.4</b>

## The Problem with Ozone

Ground-level ozone is a health concern for anyone living where air pollution is likely to be concentrated, usually in

urban areas. High levels can cause shortness of breath, coughing, wheezing, headaches, nausea, and throat and lung irritation.

People who suffer from respiratory disease are more likely to have problems, but even healthy adults who exercise or work outside for long periods can be affected. Children are of particular concern because their bodies are still developing and they spend considerable time outdoors.

Ozone is not emitted directly into the air, but is a chemical reaction at ground level between two types of gases: nitrogen oxides (NO<sub>x</sub>) and volatile organic compounds (VOCs). Under the right conditions--sunlight, heat, and little or no wind--ozone is formed.

NO<sub>x</sub>, which is produced almost entirely as a by-product of high-temperature combustion, comes from a variety of sources--electric generating plants, petrochemical plants, cars, trucks, buses, construction equipment, and even lawnmowers.

VOCs include many chemicals that vaporize easily, such as those found in solvents and gasoline. Sources include oil refineries, chemical plants, power plants, gasoline stations, and dry cleaners, as well as cars, trucks, buses, ships, and airplanes.



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