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Closing In on Attainment

The El Paso area is meeting federal air quality standards for both ozone and carbon monoxide—an achievement that caps 15 years of working to reduce emissions to healthier levels. Progress on PM10 levels continues, too.

Progress in air quality programs places El Paso in reach of its goals

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Through its remarkable 400-year history, El Paso has earned a range of titles—most notably as one of the first communities established by early Spanish explorers. Its missions are among the oldest in this country. But another title—nonattainment for federal air quality standards—was never anything to tout.

For more than a decade, residents and local officials have labored to overcome high emissions of ground-level ozone, carbon monoxide, and particulate matter. In fact, El Paso was the only Texas city having to deal with nonattainment in three different pollutants.

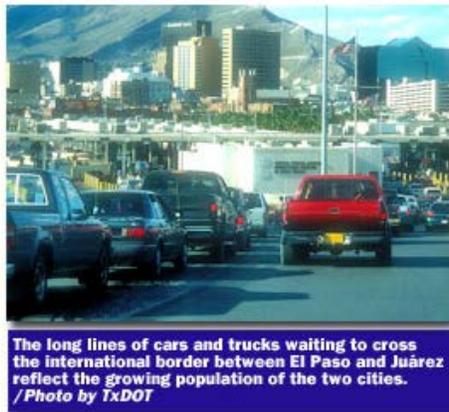
After a lot of hard work, those efforts are paying off. El Paso already has shed its nonattainment status for ground-level ozone and expects to do the same for carbon monoxide.

The far West Texas community still has to deal with particulate matter (PM10). But signs are that progress is being made on that front as well.

El Paso stands to become the first Texas city to turn around its air quality profile, and one of the few U.S. cities to go from nonattainment to attainment for more than one pollutant.

"Yes, I guess you could say the cloud is disappearing," says Jesús Reynosa, with the El Paso City-County Health and Environmental District. The air quality manager has worked in the field of air quality for more than three decades.

"El Paso was known as a dirty city back in the late 1960s when we began air monitoring," he recalls. "Now hopefully we'll have another title—the cleanest city in Texas. At least, we'll be the first to get out of nonattainment."



The long lines of cars and trucks waiting to cross the international border between El Paso and Juárez reflect the growing population of the two cities. /Photo by TxDOT

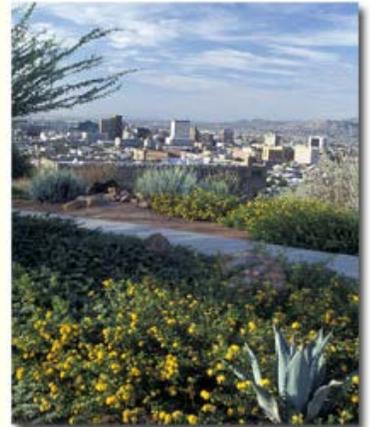
TCEQ staff is formulating a maintenance plan to help El Paso stay in compliance with federal air quality standards over the next decade. The county was in compliance with the federal 8-hour ozone standard when it was implemented in 2004 as a replacement for the old 1-hour standard.

In early 2006, the TCEQ will send the Environmental Protection Agency (EPA) an ozone maintenance plan for El Paso, as well as a recommendation for carbon monoxide attainment and the accompanying maintenance plan.

The TCEQ and EPA continue to monitor daily readings for PM10 and to discuss the best way to reach attainment for that pollutant.

"What El Paso has achieved is outstanding," says TCEQ Commissioner R.B. "Ralph" Marquez. "These residents and local officials have

overcome so much to be able to stand as a model in air improvement. This is an example of what is possible when we all work toward a common goal."



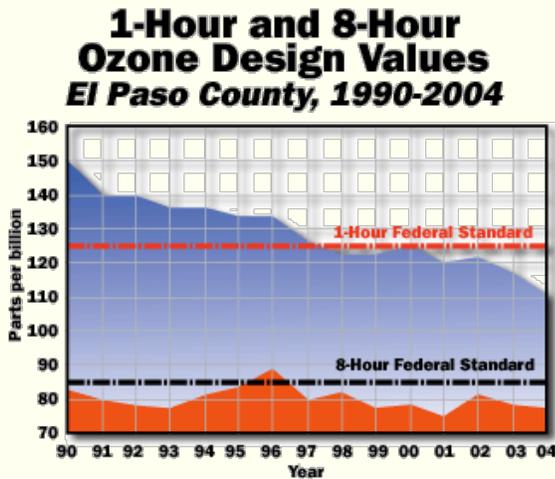
With improving air quality, El Paso residents are breathing easier and looking forward to full attainment of federal standards./Photo © Joel Salcido/Daemrich Photography

Texas has three urban areas in nonattainment for the 8-hour ozone standard: Houston–Galveston, Dallas–Fort Worth, and Beaumont–Port Arthur. All face the threat of federal sanctions if they cannot achieve compliance by deadlines set for later this decade. The San Antonio area also is considered to be in nonattainment, although the deadline for reaching attainment has been deferred by EPA. San Antonio, Austin, and Northeast Texas are taking voluntary measures to lower ozone levels.

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Multiple Factors

When it comes to overcoming air pollution, El Paso has always faced a number of obstacles. The area is semi-arid, with an average of 300 days of sunshine a year and a mere 9 inches of rain. Combine those conditions with automobile exhaust and other types of emissions, and the atmosphere is ripe for ozone formation.



Design values are used to determine an area's attainment status. For the 1-hour ozone standard, the design value is the fourth highest daily maximum 1-hour ozone concentration in a three-year period. For the 8-hour standard, the design value is the average of the fourth highest 8-hour daily maximum ozone concentration for three consecutive years.

director in El Paso. "The city and county have had modest growth, but Juárez is the key. They've had explosive population growth. We knew we had to come up with a variety of approaches for El Paso to be able to tackle all three pollutants.

"Fortunately," he adds, "this has been one of those times when things worked out. It's been very rewarding."

To track day-to-day air quality, a total of 13 monitoring sites operate in El Paso and Juárez. Ten sites in El Paso and three in Juárez monitor for elements that contribute to the formation of ozone and for the presence of carbon monoxide, and/or particulate matter. Officials with the El Paso City–County Health Department cross the border each week to help maintain the Juárez sites.

Real-time data from monitors on either side of the border are posted on the TCEQ Web site. Texas is the only state on the U.S.–Mexico border to post readings from both sides.

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Parts of the Whole

The success of El Paso's cleanup campaign can be attributed to a number of programs, all working toward a common goal.

Tailpipe inspections. Annual emissions testing for cars and trucks in El Paso have been in place since 1987, based on the two-speed idle test. Vehicles failing the test must be repaired and retested.

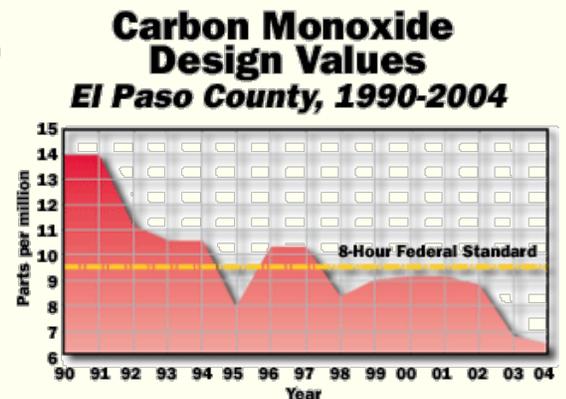
Alternative gasoline. Gasoline throughout the county is sampled to ensure that its quality meets required standards. In the winter, all vehicles go to oxygenated fuel to run cleaner and reduce carbon monoxide levels. In the summer, motorists switch to low Reid vapor pressure gasoline to control evaporation and reduce the rate of ozone formation.

Topography has played a role, too. The Franklin Mountains form a natural barrier that hems in air pollutants. In the winter, thermal inversions can trap emissions close to the ground and contribute to a buildup of carbon monoxide.

Add to all this a large, fast-growing neighbor just across the Rio Grande. With 1.2 million people, Juárez, Mexico, has twice the population of El Paso, and every day the booming city produces an abundance of industrial and vehicle emissions, with minimal environmental controls. Southerly winds blow emissions across the border, affecting El Paso's air quality.

In 1990, EPA found El Paso County to be in nonattainment for the 1-hour ozone standard, carbon monoxide, and PM10. The county skirted federal sanctions for repeated air quality violations, thanks to a stipulation that EPA will not penalize urban areas affected by a foreign source. The TCEQ joined city and county officials in devising a plan of control strategies that would work best for that region.

"The plans were designed to obtain emissions reductions to offset growth," explains Archie Clouse, TCEQ regional



Vapor recovery. All commercial gasoline pumps are equipped with Stage II vapor recovery systems. During fueling, the vapors escaping from vehicle gas tanks are captured and directed to underground storage tanks. Fuel delivery trucks must be similarly equipped with Stage I vapor recovery to minimize vapor leaks while filling fuel tanks.

Pollution prevention. The transportation of dirt and debris is regulated to prevent particulate matter from becoming airborne. Construction sites are required to water the ground surface as land is disturbed. Open burning is prohibited except by permit, and then closely monitored. When weather conditions warrant, such as during wintertime inversions, the use of residential fireplaces is prohibited. Projects that involve the removal of asbestos are monitored for compliance.

Public participation. Residents are asked to call a local complaint line when they see any infractions of local or state environmental rules. Calls are kept confidential.

"None of this has been easy," Reynosa says of the last 15 years. "Our citizens were impacted in many ways, including higher prices for gasoline. It took a lot of public education.

"I also believe our enforcement efforts have gone a long way in cleaning the air. The TCEQ assisted us with rules and regulations, and the agency's regional office helped with enforcement."

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Just Next Door

As El Paso enjoys continued progress in air quality, some of the credit has to go to Juárez, which has been incorporating more environmental controls in its urban planning.

For example, more streets are being paved to reduce airborne particulates, and a program to test vehicle emissions, which once was voluntary, is now mandatory.

In 1997, the city began enforcing wintertime use of oxygenated fuel, a move that was engineered by the Joint Advisory Committee for the Improvement of Air Quality.

"The JAC is probably one of the most beneficial binational groups ever formed," explains Clouse, one of 10 board members. "The JAC succeeded in getting PEMEX, the national oil company of Mexico, to bring oxygenated fuel to Juárez. This continues to be an important control program for the airshed."

Local, state, and federal officials in Mexico have worked closely with their U.S. counterparts, says Clouse, and that has resulted in "a higher level of commitment and awareness by the regulated community in Juarez."

Also, El Paso Electric Co. has assisted Juárez with persistent air quality problems stemming from outdoor burning. The city has long felt the effects of rudimentary outdoor kilns used to make clay bricks. The practice produces dense smoke that releases volatile organic compounds and particulate matter.



In 1990, El Paso had the unusual distinction of being found in nonattainment for three different pollutants. But with improving air quality, local officials say they look forward to reaching attainment across the board. /Photo by TxDOT

Location of Air Monitors in El Paso and Ciudad Juárez

Air quality monitors are operating at 10 sites in El Paso and three in Juárez. At these sites, a variety of equipment takes readings several times a day for ozone, carbon monoxide, and/or particulate matter. The resulting data are posted on the TCEQ Web site.



The electric company seized on a design by a New Mexico State University professor for a revised structure that reduces pollutants by 80 percent. The dome-shaped kilns are 20 feet tall, with half the structure underground where the fire is contained. The new kilns can get hot enough to fire the bricks in just 12 to 14 hours—unlike the older structures, which take up to two days. The new design improves combustion efficiency and reduces smoke emissions.

El Paso Electric has built 28 of these new kilns in Juárez, though not all are in use at this time.

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Controls to Stay

Just because El Paso is turning the corner in air quality does not

mean the existing control strategies will go away.

"We've explained to the community that the control programs that got us to attainment will stay in place, and the TCEQ will continue its daily monitoring," says Clouse.

He said the proposed maintenance plan calls for continued use of low Reid vapor pressure gasoline and annual vehicle emissions tests. In fact, El Paso County is expected to move to the more comprehensive onboard diagnostic emissions test, as have Houston, Dallas, Fort Worth, and Austin.

So what are the benefits of reaching attainment?

"That's what people have been asking," says Reynosa. "They want to know what's the upside if we have to keep all the programs in place?"

Reynosa advises El Pasoans "to consider the fact that we're in a better position to see more economic development. There have been companies in the past that wanted to set up shop here, but they wouldn't because we were in nonattainment. Also, I think this helps the whole region, with New Mexico and Mexico right next to us. It might be a big incentive for them to get more programs in place and to enforce their rules.

"Most importantly," he says, "is the fact that we have provided clean air for our citizens. That's been the goal all along, and we've done it. This is the greatest success story I could ever think of. Frankly, I'm ecstatic."

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Growth in the Sister Cities

City	Population		Increase
	1990	2000	
El Paso	515,300	563,600	9.4%
Juárez	798,500	1,217,800	52.5%
Totals	1,313,800	1,781,400	36.0%

With a combined population of almost 1.8 million in 2000, El Paso and Juárez ranked as the second largest community along the U.S.-Mexico border, surpassed only by San Diego and Tijuana.

Sources: City of El Paso; Federal Reserve Bank of Dallas

Progress in Air Quality

Then: In 1990, El Paso County was designated a "serious" nonattainment area for 1-hour ozone, a "moderate" nonattainment area for carbon monoxide, and a nonattainment area for particulate matter (PM10). Control measures developed by the TCEQ, in consultation with EPA and local officials, were instituted soon after.

Now: Air monitoring data show the area has been in compliance with the federal 8-hour ozone standard since 1997 and with the 1-hour standard since 2001. (EPA dropped the old 1-hour standard earlier this year in favor of the more stringent 8-hour rule.) No violations of the carbon monoxide standard have been recorded since 2001. Progress is being made to lower PM10 levels.

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