

# Enchanted Air

## Albuquerque/Bernalillo County

*December, 2006*



Martin J. Chavez, Mayor

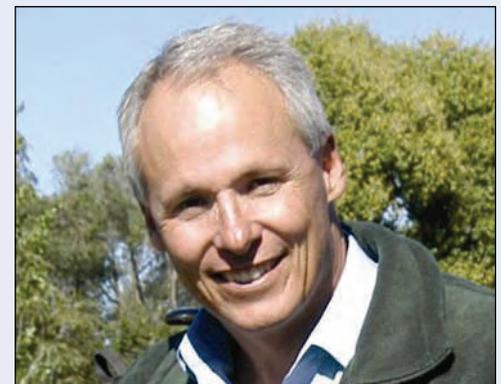


# *Understanding the Big Picture*



*Looking at the picture above, it's pretty easy to see why people want to live here. The grand vistas and endless sky have become our legacy. Albuquerque truly is in a land of enchantment. As citizens, we have an obligation to protect this precious resource for ourselves and for our children.*

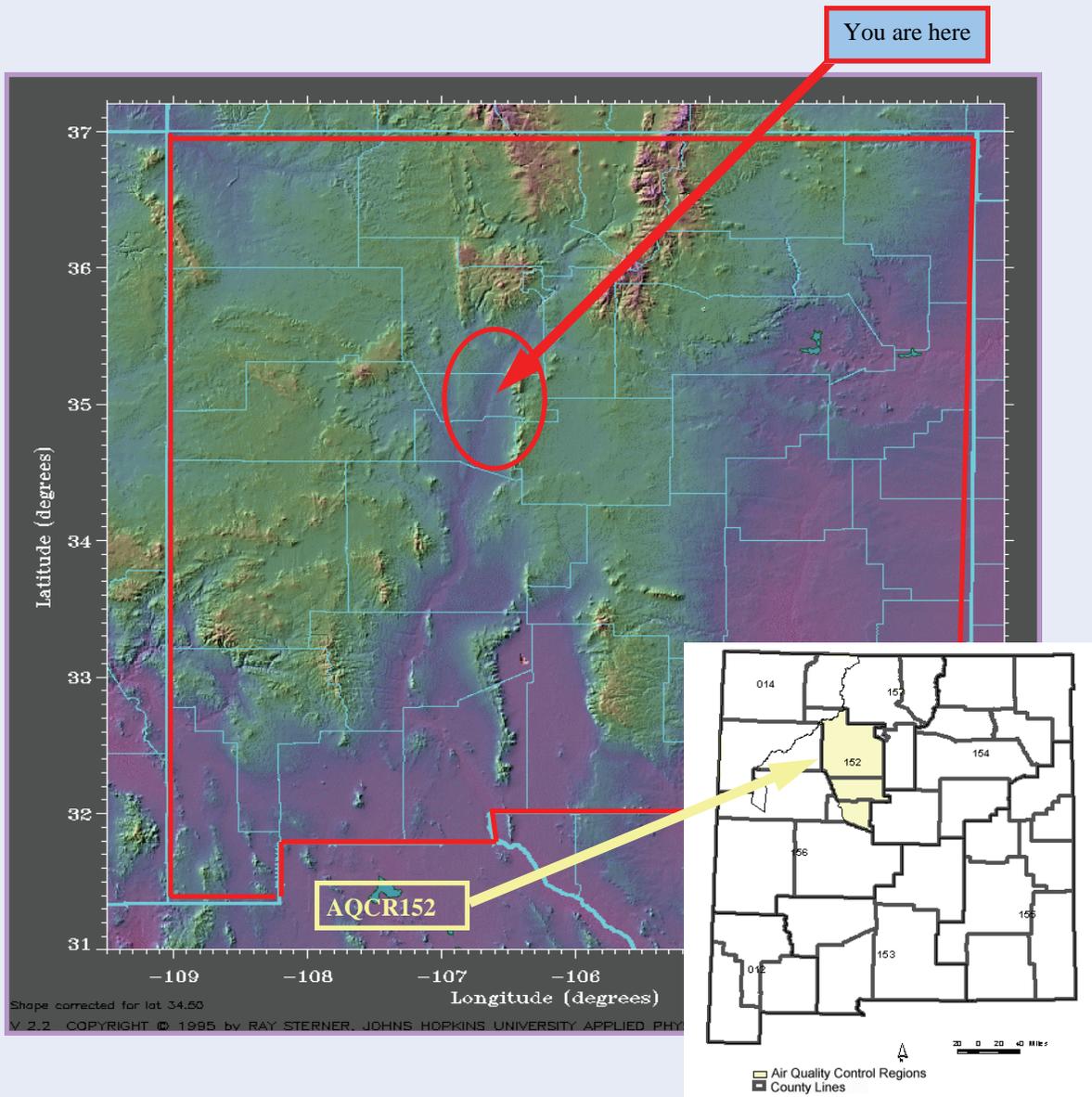
*The beautiful vistas that are so much a part of living here don't just happen. It has taken hard work, foresight and innovation to keep our skies clear. And we must draw on what we have learned to help guide our future for the air quality challenges that surely lie ahead are of global proportions.*



Martin J. Chávez, Mayor

*This report will provide the reader with an understanding of the quality of our community's air, past and present, and showcases some of the innovative steps that are being taken to maintain our precious air quality for today and tomorrow.*

# Life in the Rift



*Albuquerque, situated along the banks of the Rio Grande, lies in a broad valley called the Rio Grande Rift. The rift was formed by geologic forces slowly stretching New Mexico down the middle. Over the millennia, the Rio Grande has carved a long valley into the soft sands and clays that make up the soils of central New Mexico.*

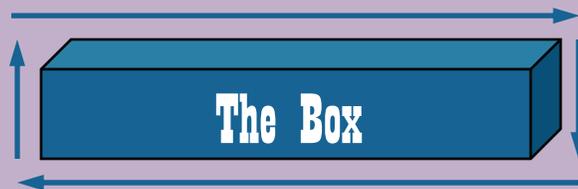
*Bernalillo County and portions of Sandoval and Valencia Counties make up Air Quality Control Region (AQCR) 152, our local airshed.*

# *We share the air!*

While global air circulation patterns ultimately prevail, regional landforms and topography such as the Rio Grande Rift serve to shape and direct the movement of regional air masses much like the shape of the land determines the course of a river. Air masses within the Rio Grande Rift tend to act collectively and in unison and are, therefore, considered to be within our “airshed”. AQCR 152 is bounded roughly on the north by the southern reaches of the Jemez Mountains, on the west by the Rio Puerco valley, on the east by the Sandia and Manzano Mountains and, on the south, the airshed loses definition and becomes indistinguishable near the village of Bernardo.

Those of us who live within the rift share air. Always have. Always will.





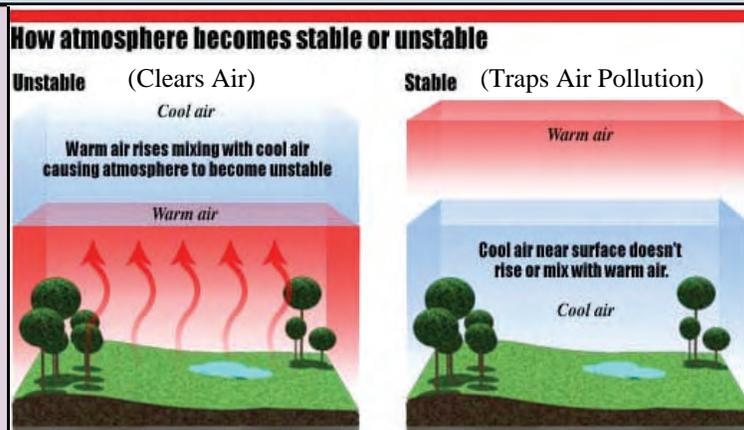
Albuquerque has become the hot-air balloon capital of the world partly because of a frequent local air circulation pattern known as “the box”. When the box is working, air masses close to the ground tend to flow in one direction while higher-level air masses often flow in the opposite direction. Careful manipulation of a hot air balloon’s elevation off the ground can make planned round-trips possible in these capricious aircraft.

Unfortunately, the same air circulation patterns that have made the Balloon Fiesta such a success can also cause air pollution to linger above our city for extended periods of time. On occasion, pollution can actually be blown out of town only to be blown back in later. The box is but one example of how our local weather patterns and our place on the planet play into our pollution history. Let’s look closer.

# Hot Air Rises

New Mexico's high altitude and dry climate set the stage for an atmospheric phenomenon called a thermal inversion. During periods of "normal" air circulation, objects on Earth's surface are warmed by the sun's radiation (short wave). These objects then shed the accumulated radiation by emitting infrared radiation (long wave) into the surrounding air masses, causing the air masses to become buoyant and rise. Cooler air masses aloft sink to replace the rising air. The resulting air circulation tends to disperse air pollutants, resulting in cleaner air near the surface.

During thermal inversions, cool air masses become trapped under layers of warmer air, stifling vertical mixing of air masses and inhibiting "normal" air circulation patterns. When inversions form, air pollutants cannot disperse normally. If the inversion is strong enough and persists long enough, air pollutants tend to get trapped near the Earth's surface and accumulate.



Albuquerque is also one of a very few large cities in the country to be located at an elevation of approximately 5,000 feet above sea level. Air is less dense at 5,000 feet than it is at lower elevations, so combustion processes such as those that occur inside your car's engine can easily become rich (too much fuel in relation to air) at our high altitude. Rich combustion processes produce excessive carbon monoxide.

**In the context of the special circumstances laid out in the last few pages, let's look at our air quality history.**

# *Legislative History*

In 1967, the New Mexico State Legislature adopted the Air Quality Control Act (State Act) which authorized the City of Albuquerque and Bernalillo County to adopt ordinances providing for creation of the Albuquerque/Bernalillo County Air Quality Control Board (Board). The City and the County adopted parallel ordinances, and the Board was created through a joint powers agreement shortly after the State Act was adopted. A primary function of the Board is to ensure that provisions of the United States Clean Air Act, as amended, are implemented. The Board has jurisdiction over air quality issues within Bernalillo County. The Board consists of seven members, four of whom represent the City of Albuquerque, and three of whom represent Bernalillo County. The City of Albuquerque legal staff serve as counsel to the Board and the Air Quality Division. The State of New Mexico Environmental Improvement Board maintains jurisdiction for air quality issues across the remainder of the state.

The federal Clean Air Act of 1970 required the Environmental Protection Agency (EPA) to establish national ambient air quality standards (NAAQS) for sulfur dioxide, particulate matter, carbon monoxide, photochemical oxidants, hydrocarbon, and nitrogen dioxide. The standards were adopted on April 30, 1971. The law required that states submit plans for maintenance of those air quality standards no later than January 30, 1972. Air sampling in Bernalillo County was initiated in the summer of 1971.

By 1978, violations of the federal standard for carbon monoxide (CO) had occurred and the County was designated in non-attainment of the NAAQS by the EPA. Though elevated levels of the particulate standard were also recorded, the exceedances didn't result in a violation of the NAAQS.

Studies conducted at that time indicated that the recorded carbon monoxide violations were attributable to emissions from motor vehicles and from wood-burning and that the exceedances of the particulate standards were related to vehicle travel on dirt roads.

Regulations were adopted and programs were implemented to mitigate elevated levels of carbon monoxide, including the vehicle emissions inspection and maintenance program, conducted year round, and the oxyfuels and Burn-no burn programs, which operate only during the fall and winter months. The Board also adopted a local regulation for control of airborne particulate matter.

# Vehicle Testing, Fuels, and Wood-Burning

## Vehicle Testing

In the early 1980s, vehicle emissions testing (The Air Care Program) was implemented as a carbon monoxide control strategy for Bernalillo County to identify those vehicles that produce excess emissions.

Currently, spark-ignited vehicles with gross vehicle weights of greater than 1,000 but less than 10,001 pounds, from model year 1975 and newer, that are registered or domiciled in Bernalillo County, or that commute into Bernalillo County more than 60 times per year must be emissions tested.

By the mid-1990s, an oxygenated fuels program was implemented as an additional carbon monoxide control measure. Since vehicles tend to produce more carbon monoxide during the winter months when warm-ups take longer and idling periods are extended, fuel sold in Bernalillo County during the months of November through February must be oxygenated. Oxygenated fuel is ordinary gasoline mixed with a small amount of ether or alcohol. The oxygenate, as the name implies, contains oxygen in its chemical makeup and, when added to gasoline, has the effect of "leaning out" the air/fuel mixture, thereby reducing the amount of carbon monoxide emitted by the vehicle.

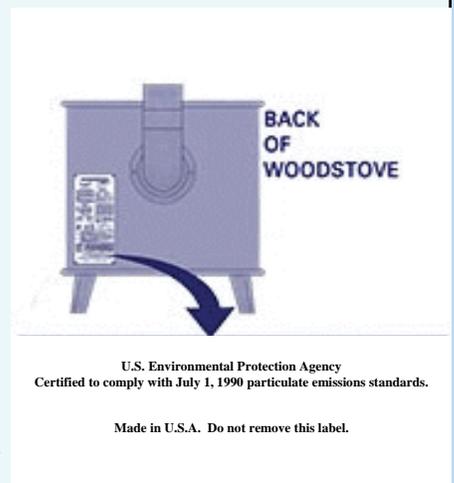
The oxy-fuels program and the vehicle emissions testing programs are administered by Vehicle Pollution Management Division (VPMD), 1500 Broadway NE. VPMD's phone number is 505-764-1110. More information about the oxy-fuels and vehicle emissions testing programs is available on VPMD's webpage at

[www.cabq.gov/aircare](http://www.cabq.gov/aircare).

## Wood-Burning

Wood-burning is still a popular way to stay warm during New Mexico's surprisingly chilly winters. Fireplaces and woodstoves can produce large amounts of carbon monoxide and particulate matter (smoke and soot) if they are not operated correctly. During the months of October through February, on days when thermal inversions promise to trap pollution, residents are asked not to operate their woodstoves or fireplaces unless the stove is EPA-certified. Listen for no-burn announcements on your local news programs, consult the City's website at [www.cabq.gov/airquality/noburn](http://www.cabq.gov/airquality/noburn) or dial 768-BURN(768-2876) for up-to-the-minute burn advisories. You can also contact the City's new Citizen's Call Center by dialing 311 on your phone. Trained City operators will be available to answer questions and to further direct your call.

No-burn exemptions are available for special circumstances, i.e., if wood burning is your only source of heat or provides the bulk of your space heating needs. Exemptions can also be granted if heating by wood-burning is a medical necessity (physician's statement required) or if low income makes wood-burning the only viable option for you and your family.

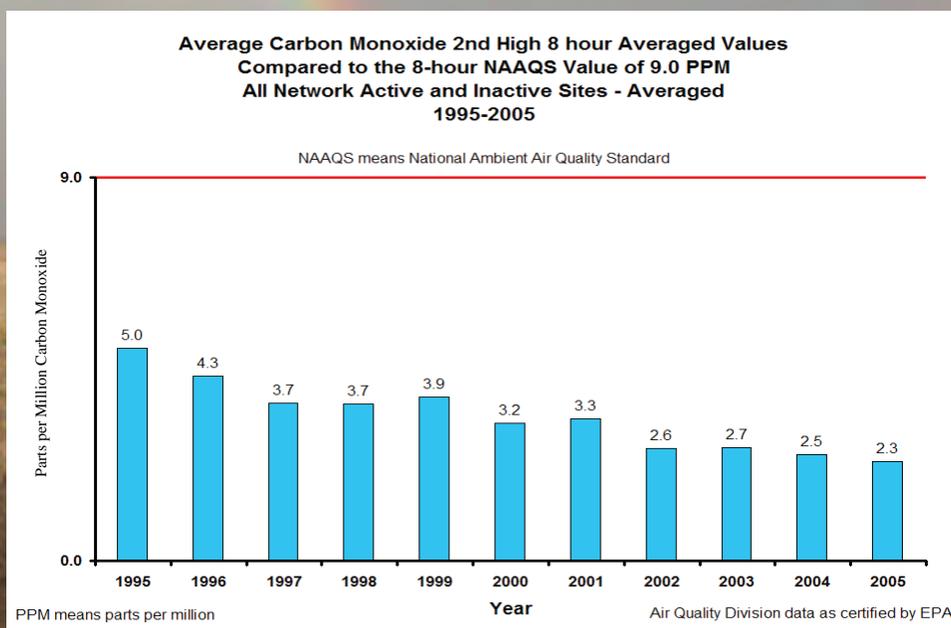


# Achieving Success

With the implementation of the carbon monoxide and particulate matter control strategies, the decade of the 1990's brought healthier air to the citizens of Albuquerque and its surrounding communities. Ambient levels of carbon monoxide throughout Bernalillo County were significantly reduced and, subsequently, the County achieved compliance with federal standards for carbon monoxide in 1996. To assure continued attainment of the NAAQS, the County must continue the existing carbon monoxide abatement programs (vehicle emissions testing, oxy-fuels and No Burn programs) to ensure that carbon monoxide levels remain within federal limits. Bernalillo County is considered to be in a Limited Maintenance Plan (LMP) at least until the year 2016 at which time our status will be re-evaluated.

While advances in automotive emissions technologies such as catalytic converters, on-board computers, and sophisticated fuel injection systems were an important part of our success against carbon monoxide, hard work, diligence, and carefully conceived local emissions abatement strategies were important as well. No emissions abatement program can be successful without the public's acceptance and diligent participation. We should be proud of our success.

It's important that we continue to use good judgment as we plan for our future air quality. It is with that in mind that we must now concern ourselves with new challenges.



# Dust Devils and Brown Clouds

It's been said that the devil is in the details. In New Mexico, devils most often come in the form of swirling columns of dust. Fugitive dust has certainly become a devilish little problem that poses serious health issues for our citizens and has become one of our current pollutants of concern.



Even the clear skies and warm summer temperatures that have made Albuquerque famous can conspire against us. Elevated levels of ground-level ozone, a pollutant that forms in warm temperatures and sunlight, have been recorded in Bernalillo County and surrounding communities. Though no violations of the federal ozone standard have yet occurred, ground-level ozone has become another of our current pollutants of concern.

Let's take a look at life in 'the rift' today.

# *“But, it’s a desert!”*

Albuquerque lies on hundreds of feet of clay and sand deposits laid down over the millennia and slowly crusted over by eons of weathering. If left alone, the soils develop a natural crust that, when coupled with sparse native vegetation, does a pretty good job holding the soils in place. But, if disturbed enough that the surface crust is broken, our local soils can easily be lifted or entrained by New Mexico’s gusty winds.



Studies conducted in Las Vegas, Nevada in 1995 (Chow and Watson, 1997b, Chow et al., 1999) showed that disturbed land areas can release up to six times as much fugitive dust into the air as undisturbed areas. Whenever the surface crust is broken by things like construction activities or vehicle traffic, the native soils are then exposed to the wind. Dirt roads are especially problematic. The soil particles are ground into smaller and smaller pieces by the movement of the wheels against the road surface. Smaller particles stay airborne longer, travel longer distances, and are more damaging to health than larger particles since they can be drawn deeper into the lungs. Each vehicle that travels down a dirt road kicks up a new dust plume to drift on the winds. The middle Rio Grande valley has experienced such a rapid increase in population in recent decades that many miles of roads remain un-paved and ongoing new construction constantly exposes more native soils to the elements.

While dirt roads and construction are an inevitable consequence of growth, it’s important that we minimize the impacts of that growth with thoughtful and effective planning and with construction practices that minimize dust. Those plans must include strategies to heal the scars on the land once the construction is completed.

The more we learn about the health risks associated with particulate pollution, the more imperative it becomes to control it.

# Particulate Pollution

In light of numerous recent health studies that show that small particles, regardless of their origins, often lead to serious, even life-threatening illnesses, new emphasis is being placed on particulate emissions by the federal government. Smaller particles are now being regulated and existing standards for larger particles are being revised. In line with those changes, a broader fugitive dust control regulation was adopted by the Board in March 2004.

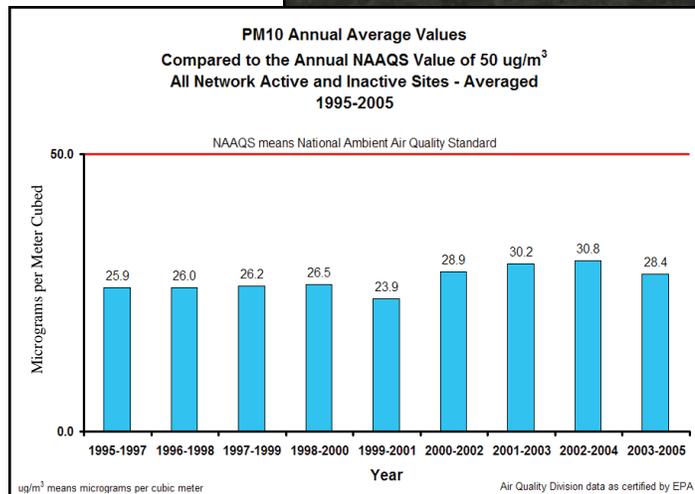
Measures have long been included in air quality permits issued by the Division requiring developers, contractors, and public and private property owners to control fugitive dust during construction projects or face potential violations and penalties. During calendar year 2005, 315 surface disturbance dust permits were issued for a total of 2,652 acres of new construction activity in Bernalillo County.

The **new** fugitive dust control regulation, however, also applies to sources not previously regulated and includes so-called “programmatic permits”. Programmatic permits are required for fugitive dust sources whose routine operations create on-going soil surface disturbances over extended time periods. Permittees pay annual fees to maintain their permits based on the degree of surface disturbance and the number of acres affected. Therefore, there are monetary incentives to minimize surface disturbances. Since the new fugitive dust regulation took effect in March 2004, 84 programmatic permits have been issued for a total of 35,340 acres of impacted land.

Agencies that are responsible for 100 miles or more of un-paved roadways in Bernalillo County may apply for a long-term dust control permit. This permit requires the submittal of an inventory of those roads and a maintenance schedule outlining a ten-year plan of fugitive dust control measures intended for those roads. There’s much yet to be done.

For up-to-date information about the dust programs, consult the Air Quality Division’s webpage at

[www.cabq.gov/airquality/dust.html](http://www.cabq.gov/airquality/dust.html)





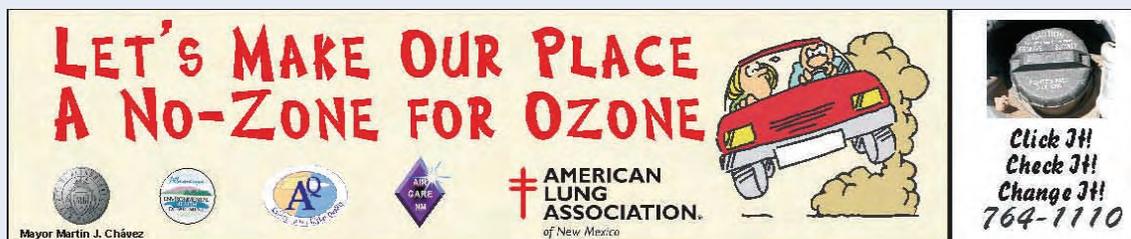
# Air Aware I Gas Cap Replacement Program



Missing, worn-out or leaking gas caps are the source of surprisingly large amounts of fugitive hydrocarbon emissions. Fuel vapors that are released into the air from missing or leaking gas caps mingle with oxides of nitrogen in the air to form ground-level ozone (see page 13).

The Air Quality Division (AQD) applied for and received a grant from the Environmental Protection Agency which enabled the Division to provide financial incentives for the replacement of gas caps found to be faulty during the vehicle emissions test. Key to the success of the Air Aware I project was the participation of the 27 local merchants who acted in partnership with the AQD as distributors of the new gas caps. Customers whose vehicles failed for missing or faulty gas caps were given a voucher worth \$10.00 toward the purchase of a new gas cap at any one of the participating retailers.

During the course of the grant-funded promotion 641 gas caps were replaced, resulting in an estimated combined annual reduction of Volatile Organic Compound (VOC) and Volatile Hazardous Air Pollutant (VHAP) emissions of approximately 58.8 tons. Due to the success of the promotion, VPMD opted to fund the promotion for an additional six months, resulting in the distribution of 172 more gas caps, preventing the release of an additional 15.7 tons of pollution into the air.



# Air Aware II Gas Can Exchange Project



Nearly everyone has a leaky old gas can sitting around in a garage or shed somewhere that's used for re-fueling small engines in lawnmowers, chainsaws or string trimmers. Many of them leak or are missing their caps and seals. Faulty gas cans, just as leaking gas caps, release vapors that contribute to ground-level ozone formation.

The Air Quality Division, using other grant-awarded funds from the Environmental Protection Agency, purchased 1,500 new, environmentally-friendly, spill-proof gas cans and invited the public to trade their leaky old gas cans for ours at no charge. The first 1,000 participants who brought in an old gas can for exchange were also given a set of Tire Minders®. Tire Minders® are patented valve stem covers that change color from green to red when a vehicle's tire pressure falls below a specific range. Under-inflation causes a tire to run hot, increasing the risk of a potential blowout and also increases the tire's rolling resistance, costing you money at the gas pump.

The first 1,500 gas cans were given away in under three weeks. The project was so successful, the AQD asked EPA for supplemental funding to purchase 1,000 additional gas cans and 250 more sets of Tire Minders® and we gave those away, too.

In all, the project is expected to prevent the emission of over 14,000 pounds of volatile organic compounds and over 3,000 pounds of volatile hazardous air pollutants per year from our air. The project was also responsible for re-cycling over 1 ton of metal and 1 ton of plastic from the old cans.

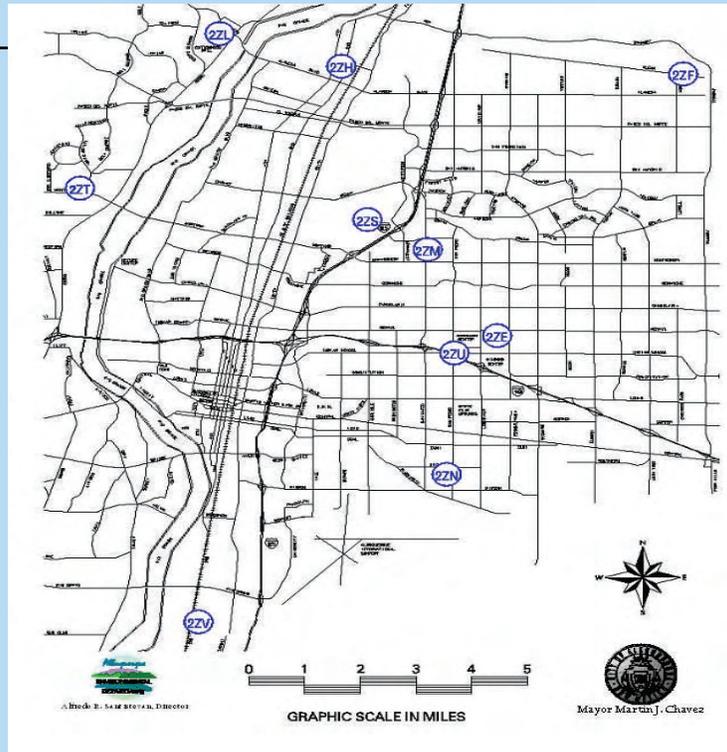
But the project did more than just reduce a few tons of emissions. It showed the public that there **are** voluntary measures that we, as individuals, can do to help clear the air and that if everyone does a little, it can mean a lot.

**VOC + NO<sub>x</sub> + Sunlight = Ozone**

# Innovation

Over the years, the Air Quality Division has built up a very impressive ambient air monitoring array. Sophisticated instruments in these facilities sample air within our breathing zones and relay that information to the Air Quality Division Headquarters. With multiple air monitors located at 10 permanent locations around Bernalillo County (see the map on the right), the network is fully computer integrated, making it possible to poll and download data from the monitors practically real-time.

The Air Quality Division has forged a partnership with the National Atmospheric Release Advisory Center (NARAC), located at the University of California's Lawrence Livermore National Laboratory (LLNL) in Livermore, California. By merging our systems electronically with NARAC's, AQD can construct computer models of potential accidental or intentional airborne chemical releases. The models will provide local decision-makers with valuable information in the event of a catastrophic release of dangerous chemicals into the air.



Ambient air monitoring stations are located at each of the 10 sites circled in blue on the map above. Each pollutant monitored requires a device engineered specifically for that pollutant, so each location contains a bevy of air monitors. The monitoring system captures minute-by-minute data from each of its air monitors, then transmits the data to our technical building where it is collected, processed and then analyzed.

Hourly averages of all that data are then individually scrutinized for anomalies. Over 75,000 data points are quality-checked each month, or almost one million data points per year.

That data may be viewed or downloaded from the City of Albuquerque's website at <http://www.cabq.gov/airquality/airqualitymonitoringdata.html>



The plots above, created using our new plume dispersion modeling capability developed in partnership with NARAC, show how particulates were dispersed during two major bosque fires during the summer of 2003.

# Involvement

Roosevelt Middle School is located in Tijeras, New Mexico, a small village a few miles east of Albuquerque. Tijeras is located in a narrow pass between the Sandia and Manzano Mountains. The pass serves as the pathway for Interstate Highway 40. Also located near the school is a large cement manufacturing facility and accompanying mine. In the spring of 2002, Air Quality Division (AQD) was contacted by a group of concerned parents who believed that emissions from the cement plant were aggravating asthma attacks among the school's students.



Air Quality Division applied for and received funding through a special grant awarded by Region 6 of the United States Environmental Protection Agency (EPA) to conduct a detailed study of the air quality in the vicinity of the school. Air Quality Division then spearheaded a collaborative effort involving staff from several diverse agencies to conduct the study.

EPA provided funding and reviewed and approved quality assurance documents, evaluated project methods and system performance, and made available relevant technical and quality assurance information to the AQD and the New Mexico Department of Health Scientific Laboratory Division (SLD). The SLD also provided their expertise. The Organics Section performed USEPA Organic Compendium Method 15 (TO-15 for volatile hazardous air pollutants) sample analysis for compounds listed by USEPA Pilot Toxics Assessment. The Air and Heavy Metals Section was responsible for filter preconditioning and weighing of the 47mm PM<sub>2.5</sub> filters and the 8" X 10" Total Suspended Particulate filters. The Air and Heavy Metals Section also analyzed the exposed filters using the USEPA Inorganic Compendium Method 3 for metals as conducted in the Pilot Toxics Assessment.

Albuquerque Public Schools (APS) provided electrical power and a chain link fence enclosure on the school premises to secure the monitoring trailer and equipment. Other collaborators include the environmental manager at the cement plant (Grupo Cementos de Chihuahua) and the staff and parents of children at Roosevelt Middle School.

The AQD's Ambient Air Monitoring Section set up, calibrated, and maintained monitoring equipment in a trailer on the school campus. Staff also utilized canister sampling for air toxics and delivered the samples to the SLD. The AQD updated and submitted an appropriate Quality Assurance Project Plan (QAPP's) that was approved by Region 6 staff. The levels of carbon monoxide, oxides of nitrogen, particulate matter, and several air toxics from the Roosevelt Middle School project were compared to recorded concentrations of those same pollutants at a permanent air monitoring station in the greater Albuquerque area (San Mateo Boulevard at Montgomery).

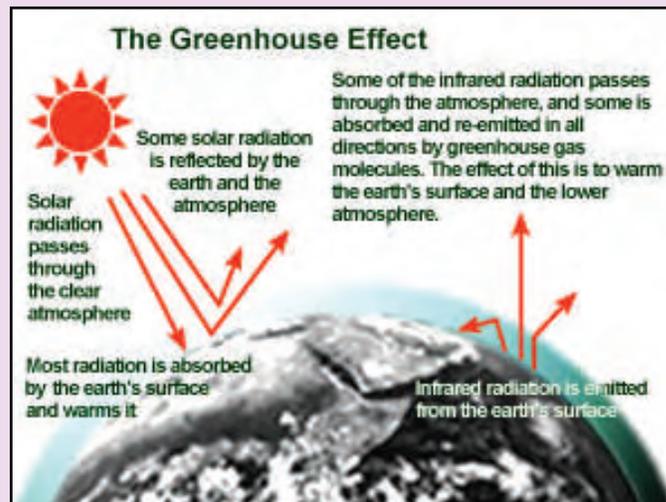
The results of the study indicated that, while the cement plant and the major highway are obviously not emissions free, overall ambient air quality in the Tijeras community measured better than the air quality in the comparison (urban) setting during the same time period, and that no violations of any federal, state, or local ambient air quality standards occurred during the course of the study.

Perhaps the most important finding from this study is that the willingness of the Air Quality Division to get involved and forge partnerships with other agencies can be instrumental in helping the public achieve a better understanding of the importance of air quality and the need to protect it. To see the results of this project, visit

[www.cabq.gov/airquality/specialprojects.html](http://www.cabq.gov/airquality/specialprojects.html)

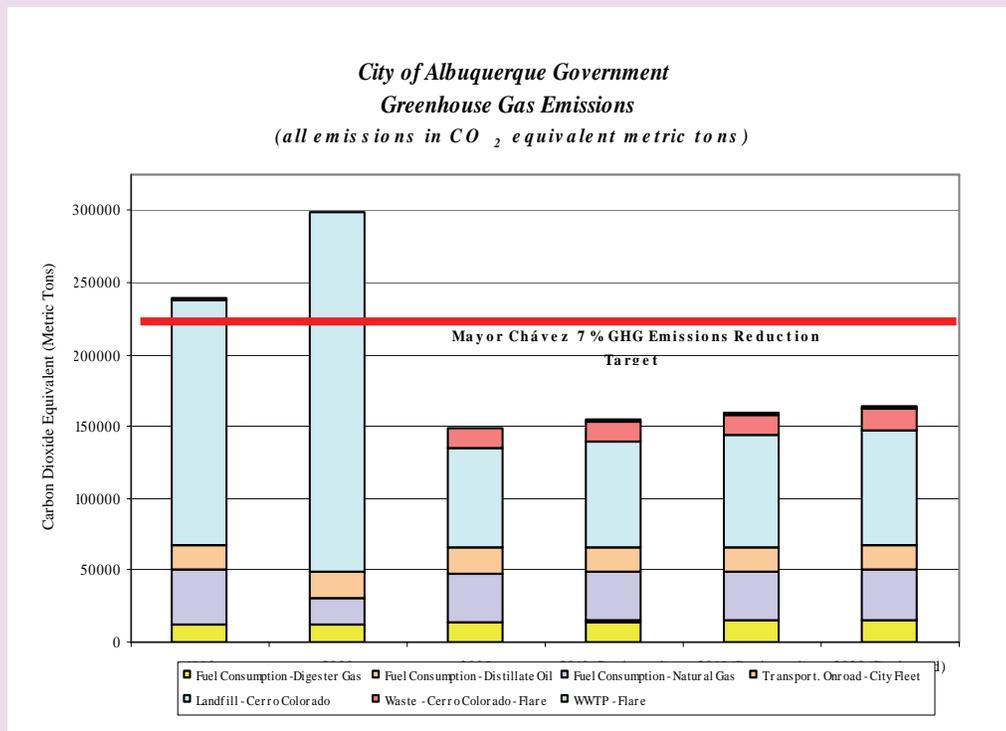
# Climate Change

Since the beginning of the industrial revolution, human activities, especially those that involve combustion of fossil fuels, have increased the emission of pollutants into the air. Some of these pollutants include gases such as carbon dioxide ( $\text{CO}_2$ ), methane ( $\text{CH}_4$ ), and oxides of nitrogen ( $\text{NO}_x$ ), called greenhouse gases. Greenhouse gases help to trap energy from the sun within the earth's atmosphere. Greenhouse gases are necessary since, without them, the temperature on Earth would be much cooler than it is now and life as we know it would not exist. But global concentrations of carbon dioxide have increased nearly 30% since the industrial revolution began. Methane concentrations have more than doubled, and nitrous oxide concentrations have risen by about 15%. (EPA, 2000) Although greenhouse gases have always been present in the atmosphere in lesser amounts, many scientists now agree that recent human activities have increased the concentrations of these gases in the atmosphere to the point that it is leading to a fundamental and dramatic, perhaps even catastrophic climate change. Others argue that recent increases in global temperatures are simply part of a natural cycle.

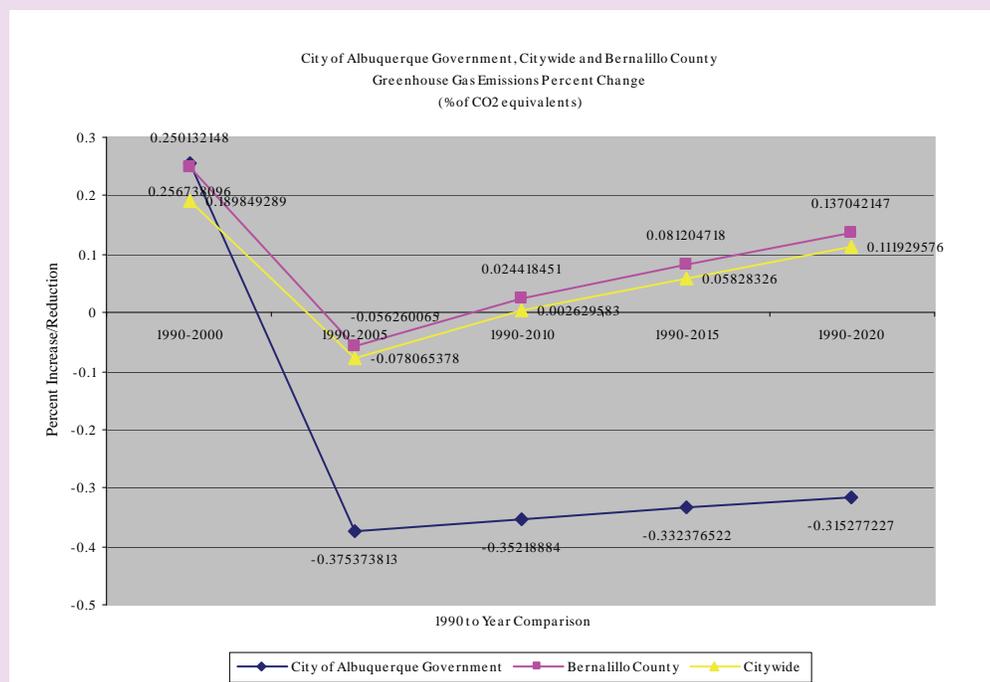


While debate about climate change and global warming continues, much of the world has joined together in a pact to reduce greenhouse gas emissions known as the Kyoto Protocol. The United States has not yet joined. A group of cities across the country, including the City of Albuquerque, have banded together to voluntarily try to meet the objectives of the Kyoto Protocol.

The chart below shows the City of Albuquerque's greenhouse gas emissions reduction objective and the city's performance in meeting those goals. Much of the reductions shown in the chart came from installation of a flare at the Cerro Colorado Landfill. The flare burns off methane that's produced by the decomposing waste. Methane is a known greenhouse gas. Before installation of the flare, the methane was discharged directly into the air.



The flare's dramatic impact on greenhouse gas emissions reductions can be seen in the following chart as well. Every community contributes to greenhouse gas emissions. Every community can join in the efforts to reduce these emissions as well.



# City of Albuquerque's Award-Winning Website

The City of Albuquerque has made dramatic improvements to its website at [www.cabq.gov](http://www.cabq.gov) and the Air Quality and Vehicle Pollution Management Divisions have kept pace with those improvements by sprucing up their individual pages as well. Visit Air Quality Division's website at [www.cabq.gov/airquality](http://www.cabq.gov/airquality) and Vehicle Pollution Management Division's website at [www.cabq.gov/aircare](http://www.cabq.gov/aircare). If you haven't visited us on the internet for a while (or even if you have) check it out. There are many new features too numerous to mention here but here's just a small sample of what you'll find there.

- Try the Smog City Simulator! It's an interactive simulator that allows kids and adults to manipulate various emissions inputs in an imaginary city to see how pollution is formed and controlled.
- Air Quality Public Information Clearing House.
- Air Quality applications, regulations, ordinances, and forms available for downloading.
- Winter Advisory no-burn status (seasonal). List serve available.
- Schedule of public meetings and air quality-related events.
- Ozone forecast (seasonal).
- Pollen Counts (seasonal) List serve available.
- Weather Forecast (National Weather Service).  
Includes High Wind Advisories, and pollution forecasting.
- Pollutant descriptions, information and standards.
- Listing of Air Care Stations (test centers).
- Report smoking vehicles.

The top screenshot displays the 'Vehicle Pollution Home' page. It features a navigation bar with links for HOME, LIVING, VISITING, BUSINESS, A-Z, and eSERVICES. A search box is located in the top right corner. The main content area includes a 'Vehicle Care' section with links for Emissions Testing, Air Care Stations, and Out-of-State Vehicles. A descriptive paragraph states: 'City of Albuquerque Vehicle Pollution works to protect the environment of Albuquerque and Bernalillo County and its citizen's health by developing and implementing programs that effectively reduce motor vehicle emissions. The main program components are Oxygenated Fuels, Inspection and maintenance, Smoking Vehicles and Remote Sensing. We realize that we must be proactive in our approach and seek strong working relationships with those we serve if we are to succeed. We strive to design local programs that are effective for our citizens and our environment. We are uniquely qualified to address this challenge because of our versatility, unique technical expertise, and our broad knowledge of environmental health. We are dedicated to providing the best service possible to the citizens we serve and the environment they live in. We edge our time, energy and talents to this vision of a healthful environment. The Vehicle Pollution Management Division is the headquarters for the Albuquerque/Bernalillo County auto emissions program. The facility is located at 1500 Broadway NE. Vehicle Pollution Management Division houses two large test bays that are used for training Air Care inspectors and for retesting vehicles that have failed an emission test at any one of the certified air care stations.'

The bottom screenshot displays the 'Air Quality' page. It features a navigation bar with links for HOME, LIVING, VISITING, BUSINESS, A-Z, and eSERVICES. A search box is located in the top right corner. The main content area includes a 'Your Health & the Air' section with links for About the Air Quality Index, Air Quality, Radon, Pollen, Ozone Formation, Temperature Inversion, and Vehicle Fuel Economy Information. A 'Regulations & Ordinances' section lists links for Air Quality Ordinances and Regulations, About Air Quality Control Board, Fuel/No Burn Program, Open Burn Program, and Small Business Assistance. A 'Contact' section provides mailing/physical address, environmental health/air quality address, phone, fax, and email information. A 'Quick Links' section includes links for Air Information-Start Here, Today's No Burn Call, Today's Pollen Count, Learn More about Pollen, Restricted Trees, Air Quality Contacts, Other City Contacts, and Complaints - or Call 311. A 'What's New in Today's Air Quality' section features a 'Green Alert' icon and text: 'Today is a Green Alert, you may use your fireplace or woodburning stove. Click here for restrictions and additional information.' A 'NEW' icon and text below it state: 'The City of Albuquerque's Air Dispersion Modeling guidelines and technical data are now ready.'

# Ozone Forecasting

The science of air pollution control has made great strides in recent years that have allowed the Air Quality Division to take a more pro-active approach to maintaining our community's air quality. The Division is now able to meld meteorology with computer modeling to make predicting some air pollu-



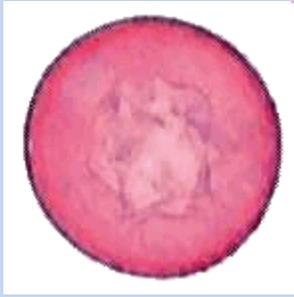
tion events possible. That's a real handy trick when dealing with pollutants like ozone which, as we saw in previous pages of this report, can form miles away from the source of the precursors and hours after they were emitted. The City of Albuquerque forecasts ozone from May 1st through September 30th.

Ozone can cause irritation of the respiratory system and can cause permanent lung damage, reducing one's ability to breathe deeply and vigorously. Ozone can aggravate asthma and chronic lung diseases such as emphysema and bronchitis.

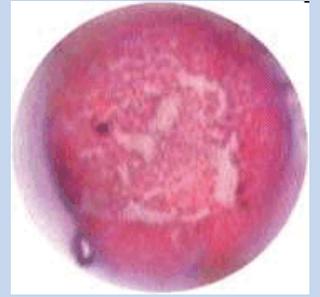
Ozone forecasting takes a lot of science and a little common sense. For example, ozone levels are more likely to be high from Monday through Thursday than on Sunday. This pattern can be attributed to less traffic and less in the way of industrial operations on Sunday.

Approximately 300 other municipalities are forecasting ozone levels daily. Residents of Albuquerque, especially those folks who are sensitive to pollution, can use ozone forecasts to plan their activities. For example, when ozone levels are predicted to be in the unhealthful range, people with respiratory issues such as asthma can better plan their activities to avoid strenuous activities on high ozone days.

# Pollen Reporting



Juniper



Cottonwood

While not regulated by air quality standards, our air often contains plant pollens that can cause allergic reactions among sensitive individuals at certain times of the year. In order to provide the public with a more thorough understanding of what potential plant pollens might be present in the air on any given day, Air Quality Division gathers, identifies, and counts pollen grains daily from March 1 through October 1 each year as a public service. Pollen counts are listed on the Air Quality Division's webpage at <http://www.cabq.gov/airquality> where individuals may also sign up for daily pollen counts delivered by e-mail.

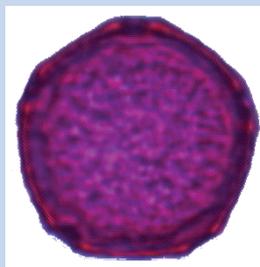


Chenopod

Some trees are such prolific producers of pollen in our area that there are planting restrictions banning their sale and cultivation. Check Air Quality Division's pollen webpage for specific information about restricted trees. You can also find out which trees produce the most pollen and at what time of the year. If tree pollen's really got you down, you'll also find a link to help you plan your xeriscaping project.



Mulberry



Elm

# Your Air Quality Today

Those of us who live in “the rift” share air. It’s simply an undeniable fact. There is nothing more fundamentally important to the health and welfare of the citizens of our community than fresh, clean air. History has shown us that central New Mexico’s air can become polluted unless we remain vigilant and willing to do those things that are necessary to protect our air quality. Violations of federal ambient air quality standards for carbon monoxide in the 1970s led to mandated emissions control programs that persist yet today.

Through hard work and good fortune, emissions of carbon monoxide in our airshed have been greatly reduced. But, our success against carbon monoxide doesn’t mean we can afford to forget the lessons we have learned. Constant monitoring of our air quality is necessary to allow us to make prompt, informed decisions about how to protect the air we breathe. Science has now given us the tools to recognize potential future air quality trends and affords us the opportunity to design and develop emissions reduction strategies **before** air quality violations can occur.

The weather patterns that accompany our place on the planet persist. Inversions still form over the rift. The potential for pollutants to accumulate under those inversions is always present. Over time, as our community has evolved and grown, our air quality has evolved as well. While high levels of carbon monoxide are no longer a threat in our community, emissions of other air contaminants have increased. To keep pace with our changing air quality, we must adapt. New regulations have been put in place to maintain our precious air quality for future generations. The Air Quality Division pledges to do its part to keep our community informed and to provide the technical expertise necessary to make informed decisions possible.



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