Report to the Public 2007-2008

Colorado

Air Quality Control Commission

Colorado Department of Public Health and Environment

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Report to the Public
2007-2008

Colorado Department
of Public Health
and Environment

The Report to the Public is issued by the Colorado Air Quality Control Commission and prepared by the Air Pollution Control Division of the Colorado Department of Public Health and Environment,

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On-Line: www.cdphe.state.co.us/ap/rttplinks.html

Statutory requirement for public report

Colorado Revised Statutes, Title 25, Health

25-7-105. Duties of the Commission

(4)(a) The commission and the state board of health shall hold a public hearing during the month of October of each year in order to hear public comment on air pollution problems within the state, alleged sources of air pollution within the state, and the availability of practical remedies therefor; and at such time the technical secretary shall answer reasonable questions from the public concerning administration and enforcement of the various provisions of this article, as well as rules and regulation promulgated under the authority of this article.

(5) Prior to the hearing required under subsection (4) of this section, the commission shall prepare and make available to the public a report which shall contain the following specific information:

(a) A description of the pollution problem in each of the polluted areas of the state, described separately for each such area;

(b) To the extent possible, the identification of sources of air pollution in each separate area of the state, such as motor vehicles, industrial sources, and power-generating facilities;

(c) A list of all alleged violations of emission control regulations which shows the status of control procedures in effect with respect to each such alleged violation.

Colorado Air Quality Control Commission

www.cdphe.state.co.us/op/aqcc/

Commissioner	Resident of:	Term expires:
Robert Arnott	Greenwood Village	January 31, 2009
Radford Byerly	Boulder	January 31, 2011
Ashley Campsie	Littleton	January 31, 2011
Garrett Clemons	Denver	January 31, 2009
Teresa Coons	Grand Junction	January 31, 2010
Cynthia Peterson, *chair*	Littleton	January 31, 2011
Barbara Roberts, *vice-chair*	Broomfield	January 31, 2010
Jon Slutsky	Wellington	January 31, 2009
Jim Wilson, *secretary*	Superior	January 31, 2010

Douglas A. Lempke, Administrator

Theresa Martin, Program Assistant

STATE OF COLORADO

Bill Ritter, Governor
James B. Martin, Executive Director

COLORADO AIR QUALITY CONTROL COMMISSION
http://www.cdphe.state.co.us/op/aqcc/

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Colorado Department
of Public Health
and Environment

October 1, 2008

Dear Fellow Coloradan:

The Colorado Air Quality Control Commission presents this annual report to share information about the quality of our air, to present ongoing activities that protect air quality in Colorado and to summarize the challenges that we all face.

The commission is the state agency responsible for developing and adopting regulatory programs to protect and improve air quality in Colorado, but there are many organizations that work to help improve the quality of our air. For example, the Air Pollution Control Division implements the air quality programs adopted by the commission and works with numerous federal, state and local government agencies to ensure good air quality throughout the state. Nongovernmental organizations, as well as businesses and industries regulated by the programs, also contribute to air quality protection.

In addition, Colorado citizens play an increasingly important role in the quality of our air. Everyday actions such as reduced driving, vehicle maintenance and energy conservation can significantly improve air quality – especially when we all take part. As we address the challenges of achieving and maintaining good air quality in the future, individuals will be called upon, more than ever, to help in these efforts.

During the past year, the commission has worked to adopt and better understand programs that:

- Reduce air pollutant emissions from oil and gas exploration and development
- Reduce ozone pollution in the Denver area and throughout the state
- Address air pollution related ecosystem impacts in Rocky Mountain National Park
- Reduce mercury emissions at coal fired electric utilities
- Improve visibility in Colorado national parks and wilderness areas
- Identify and repair high polluting motor vehicles

In the coming year, there remain difficult challenges that must be addressed, which include:

- Reducing elevated ozone concentrations in the Denver metropolitan area and northern Front Range
- Completing a plan to improve visibility in national parks and wilderness areas
- Adopting a plan to repair high polluting cars and light-duty trucks
- Investigating impacts of climate change

I encourage you to become educated about the quality of the air in our state, to attend and participate in the monthly commission meetings and to express your views on air quality issues. Meeting agendas, minutes and more information are available on our web site: www.cdphe.state.co.us/op/aqcc/

Sincerely,

Cynthia Peterson

Cynthia Peterson
Chair

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Air Quality Overview

Colorado, like many states, has experienced numerous issues with air quality, but has been successful in providing good public health protection and improving air quality. Since the time that air pollution monitoring began in the 1970s, Colorado has improved poor air quality in areas of the state where violations of the national standards were recorded and preserved those improvements over time.

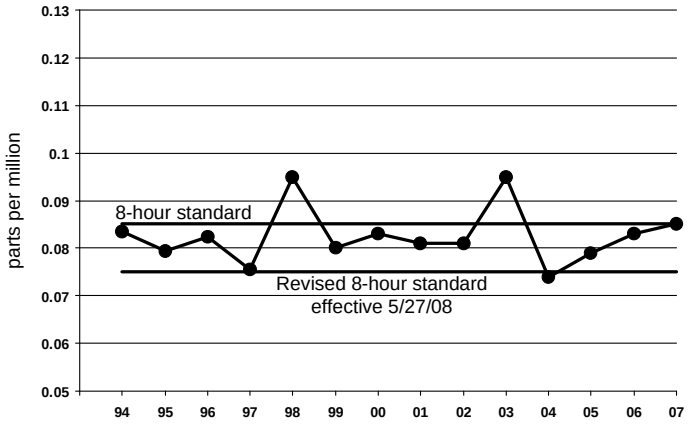
In 2002, Colorado accomplished a milestone by achieving compliance with all federal air quality standards and having the U.S. Environmental Protection Agency (EPA) designate all areas of Colorado in compliance. Since that time, areas of the Front Range, specifically the Denver metropolitan, Greeley and Fort Collins areas, have fallen out of compliance with the national standard for ozone. At the same time, EPA has lowered the national standard for ozone, making the challenge to maintain compliance that much greater. Colorado will need the combined efforts of state and local governments, business and industry, as well as the citizens of the state to meet the challenge of reducing ozone pollution.

In addition to ozone, Colorado is working to address air pollution from a variety of sources to ensure we maintain healthy air quality and continue to protect the natural resources in all areas of the state. Colorado is working to address air pollutant emissions from oil and natural gas development, emissions from cars and light duty trucks, visibility in our scenic places and deposition of nitrogen bearing compounds in Rocky Mountain National Park.

Colorado is currently undergoing a significant increase in oil and gas development in many areas of the state. While Colorado has historically been an area of oil and gas development, the recent increase has presented some air quality challenges. Emissions from oil and gas sources have been significantly reduced along the Front Range as well as other areas of the state, and additional emission reduction controls are being evaluated. Reducing emissions from oil and gas will help reduce ozone pollution and improve visibility, as well as reduce odors and exposure to air toxics.

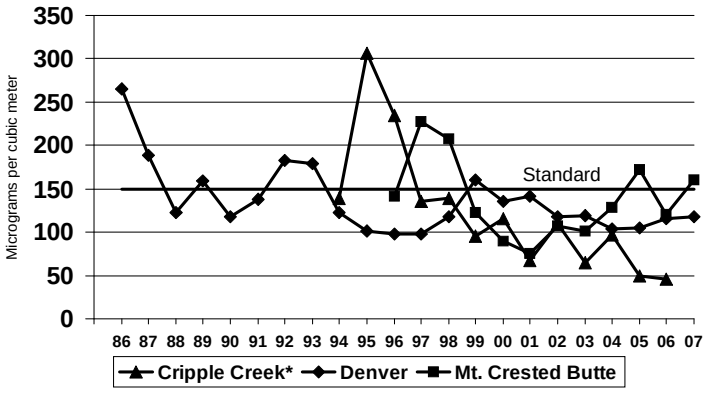
Denver Metro Ozone (O_3)Trends

NREL Golden Monitor, 4th maximum 8-hour values



PM10 Trends

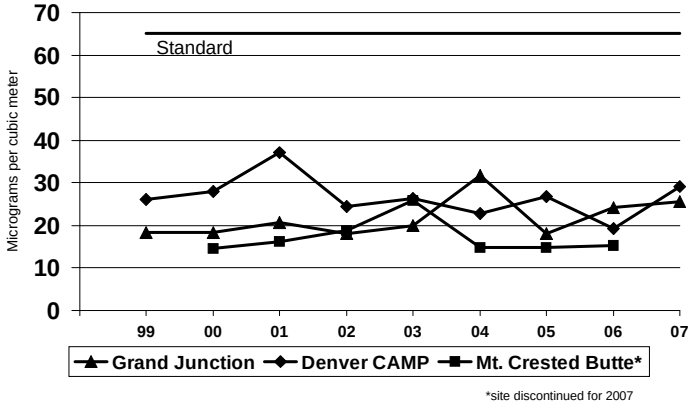
24 hour average



* site discontinued for 2007

PM2.5 Trends

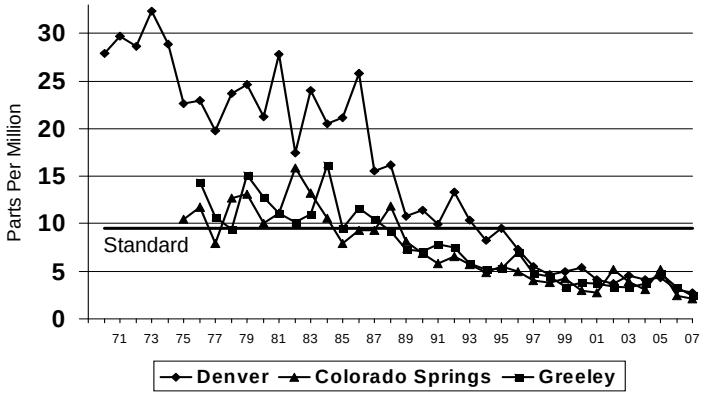
98th percentile value, 24-hour average



*site discontinued for 2007

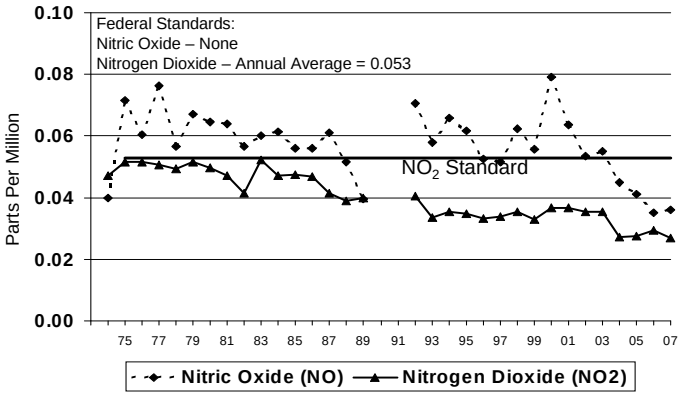
Carbon Monoxide (CO) Trends

2nd 8-hour maximum value



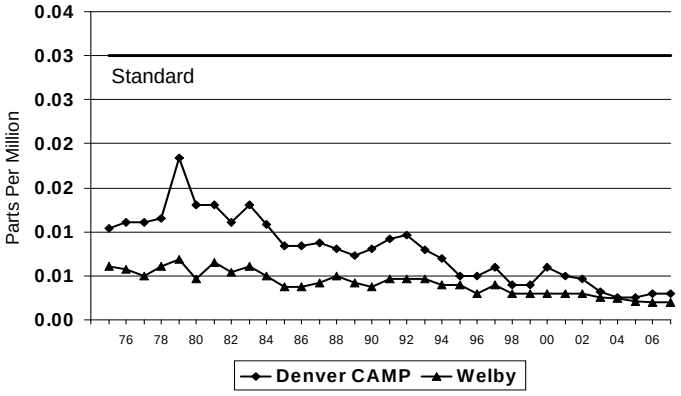
Oxides of Nitrogen (NO_X) Trends

Annual Average, CAMP station, 2105 Broadway, Denver



Sulfur Dioxide (SO_2) Trends

Annual Average



Air pollutant emissions from cars and light duty trucks as well as heavy-duty vehicles collectively contribute to adverse air quality in Colorado. High emitting vehicles or vehicles with engine system malfunctions contribute disproportionately large amounts of pollution. The state implements a vehicle emissions testing program in the Front Range and is working to more efficiently identify and require repairs for high emitting vehicles. Continuing to reduce vehicle emissions will help to reduce ozone concentrations as well as carbon monoxide and oxides of nitrogen air pollution.

The state is also working to develop and adopt plans to reduce air pollutant emissions that obscure visibility in our National Parks and Wilderness Areas. The state has adopted several measures to improve visibility under the requirements of the federal regional haze program. Emission reductions from major sources of sulfur dioxide and oxides of nitrogen will be implemented in the next several years to help achieve this goal. Impaired visibility is a regional air quality issue that will require emission reductions from numerous sources across broad regions of the country and will take several years to accomplish. Colorado is working within the state as well as with other western states to reach this objective.

In Rocky Mountain National Park, the state is working with EPA and the National Park Service to address nitrogen deposition in the park from oxides of nitrogen and ammonia. Oxides of nitrogen are typically generated from the burning of fuel such as coal, oil, gasoline and natural gas. Ammonia is typically produced from agricultural operations such as livestock management and fertilizer application. Ammonia is also produced from the urban application of fertilizer on lawns and gardens. Excess nitrogen deposition in the park works as a fertilizer and creates adverse impacts to the park's natural ecosystems. The state is working to significantly reduce nitrogen deposition by working with the agricultural community to reduce ammonia emissions. The state also is developing NOx emission control strategies in the Front Range to provide a benefit for numerous air quality improvement programs.

Causes of ozone pollution in Colorado

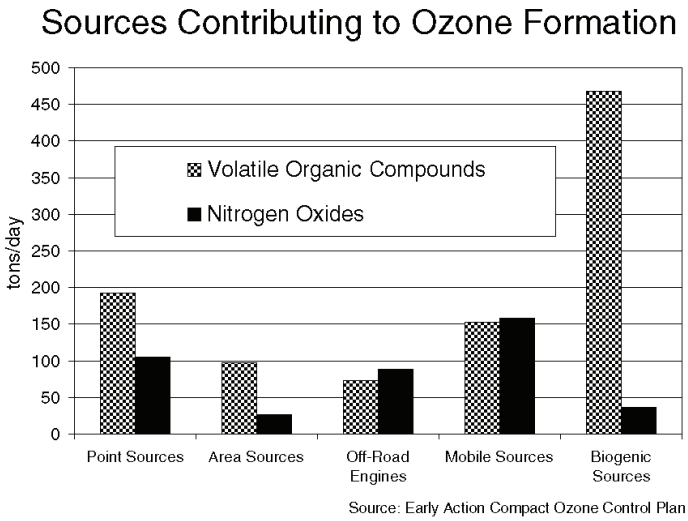
Ozone pollution is formed through complex photochemistry involving volatile organic compounds (VOCs) and nitrogen oxides (NOx) in the presence of sunlight. Emissions from motor vehicles, industry and even vegetation contribute to ozone formation.

Ozone can cause breathing difficulties and respiratory infections in the elderly, the young and those with pre-existing ailments such as asthma. Even healthy people who exercise or work outdoors can experience respiratory effects from ozone.

Ozone is colorless and odorless at ambient concentrations. In the upper stratosphere, ozone helps protect the earth from ultraviolet radiation.

The highest ground-level ozone concentrations occur in the summer when hot, still days cause reactive pollutants to form ozone.

The Air Quality Control Commission has been analyzing ozone reduction efforts and will be considering an ozone reduction plan in 2008. For more information see page 9, and www.cdphe.state.co.us/ap/ozone.html.



Point Sources: Emissions that come from a stationary source such as factories and industrial sources and oil and gas production sites.

Mobile Sources: On-road motor vehicles.

Off-Road Engines: Lawn and construction equipment, off-road vehicles, locomotives, airplanes, etc.

Area Sources: Emissions that do not include point or mobile sources.

Biogenic Sources: Naturally occurring emissions from vegetation, including trees, plants and crops.

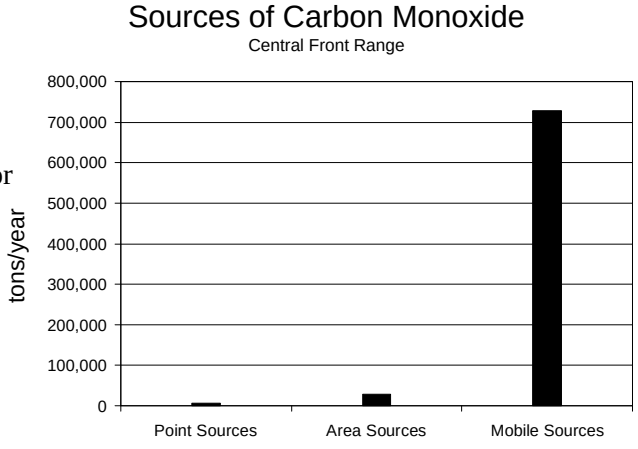
Sources of carbon monoxide pollution in Colorado

Carbon monoxide is produced primarily during incomplete combustion of fuels used in transportation and heating. It is the largest single fraction of pollutants found in urban atmospheres. About 90 percent of carbon monoxide in the Denver area comes from motor vehicles. Other sources are woodburning, aircrafts and locomotives, construction equipment, power plants and space heating.

Carbon monoxide deprives the body of oxygen and especially affects people with cardiovascular conditions.

In Denver, the daily concentration peaks occur after morning and evening rush hours. The problem is more severe in winter when cold weather causes engines to run less efficiently and meteorological conditions trap pollutants near the ground.

Denver has not violated the carbon monoxide standard since 1995. Carbon monoxide has continued to decrease due to cleaner motor vehicles and residential burning regulations.



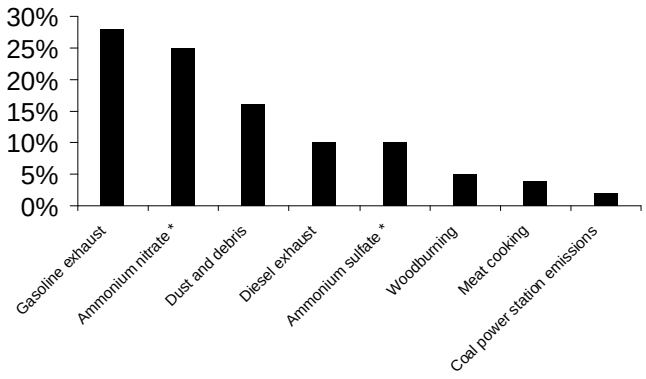
Point Sources: Emissions that come from stationary sources such as factories and industrial sources.

Mobile Sources: Both on- and off-road motor vehicles and any engines that are mobile and give off emissions.

Area Sources: Emissions that come from a broad area that do not include point or mobile sources, including emissions from heating, woodburning fireplaces, forest fires and controlled burns.

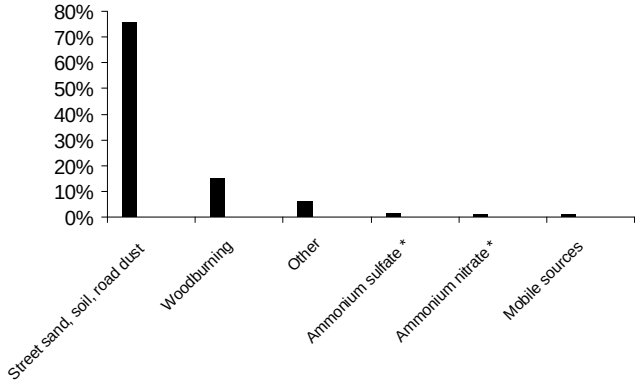
Sources of particulate matter pollution in Colorado

Denver PM2.5 Contributions



This chart represents average source and chemical contribution to the 24-hour average PM2.5 concentration at a north Denver area monitoring station during the winter.

PM10 Contributions
Typical Mountain Community



This chart represents typical source and chemical contributions to PM10 during a high pollution day in the winter. Data are averaged from studies of five mountain communities in Colorado.

PM2.5

PM2.5 is composed of a mixture of particles directly emitted into the air and particles formed in the air by the chemical transformation of gaseous pollutants. This chemical transformation principally leads to ammonium sulfate and ammonium nitrate formed in the air from gaseous emissions of sulfur dioxide (SO2) and oxides of nitrogen (NOX) reacting with ammonia. The main source of SO2 is combustion of fossil fuels in boilers, and the main source of NOX is combustion of fossil fuels in boilers and motor vehicles. Some secondary particles also are formed from semi-volatile organic compounds which are emitted from a wide range of combustion sources.

PM2.5 particles have an aerodynamic diameter of 2.5 microns or less. A micron is approximately one-seventh the width of a human hair. Particles this small can be inhaled deeply into the lungs where they can damage tissue and lead to lung cancer and other respiratory diseases. PM2.5 also results in visibility degradation and haze.

PM10

PM10 refers to particulate matter that is 10 microns in diameter or smaller. The particles, consisting of solid or semi-solid material suspended in the atmosphere, are created from road dust, automobile and diesel engine exhaust, soot, and sulfates and nitrates from combustion sources.

The dust portion of PM10 includes windblown sand and dirt from roadways, fields and construction sites. Man-made particulates are created during the burning of fuels associated with industrial processes or heating. These particles include fly ash from power plants, carbon black from automobiles and diesel engines, and soot from fireplaces and woodstoves.

When inhaled deeply into the respiratory system, PM10 can affect lung and heart function, and weaken immune system defenses. The environmental effects of PM10 range from visibility degradation to climate changes and vegetation damage.

* Ammonium nitrate and ammonium sulfate are formed in the atmosphere through chemical reactions as opposed to being emitted directly into the air. The North Front Range Air Quality Study (www.nfraqs.colostate.edu) concluded that the majority of ammonium nitrate is caused by motor vehicles, and three-fourths of sulfur dioxide, a precursor to ammonium sulfate, comes from coal-fired power stations.

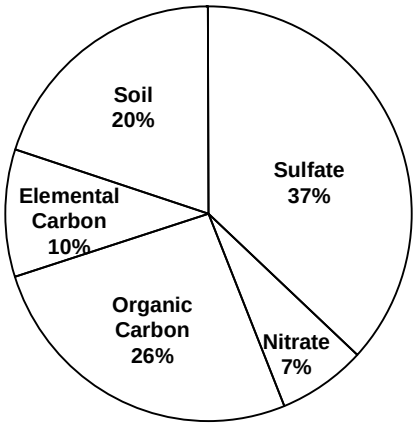
Sources of regional haze in Colorado

Regional haze is a term for the veil of white or brown haze that obstructs vistas in many parts of the country, including areas of Colorado. The haze is caused by fine particles including sulfates, carbon, soils and nitrates. These particles are produced by power plants, industrial sources, motor vehicles, fires, and windblown dust and dirt. The particles are carried by the wind, sometimes for hundreds or even thousands of miles (in the case of transcontinental transport of pollutants).

In our nation's scenic areas, the visual range has been reduced substantially by air pollution. In the West, visual range has decreased from an average of 140 miles to 35-90 miles, according to the U.S. Environmental Protection Agency (EPA).

The Colorado Air Quality Control Commission adopted a planning process in 2004 to meet the requirements of the 1999 federal Regional Haze Rule. In response, the Air Pollution Control Division is developing a Regional Haze State Implementation Plan to meet the EPA's 2008 deadline. The process requires a detailed analysis of regional haze for 12 wilderness areas and national parks in Colorado that have been designated "Class I" for visibility protection by the EPA. The process also requires the establishment of reasonable progress goals for each of these areas, and a plan that demonstrates how the first phase of goals will be met by 2018. A major part of the federal rule requires improved emissions controls on certain types of major industrial sources of regional haze. These emissions controls are known as Best Available Retrofit Technology, or BART. The ultimate goal of the federal Regional Haze Rule is to achieve "natural conditions" for visibility by 2064 in all Class I Areas.

Makeup of fine particles in haze in rural Colorado Class I areas



Source: IMPROVE Report

A preliminary regional haze plan was developed and approved by the Air Quality Control Commission in 2007. More regional haze planning will be undertaken in the near future. For more information see: www.cdphe.state.co.us/ap/regionalhaze.html.

Sources of air toxics in Colorado

Toxic air pollutants, also known as hazardous air pollutants, are those pollutants that are known or suspected to cause cancer or other serious health effects. Hazardous air pollutants can increase risk of cancer, sterility and nervous system disorders.

Air toxics are a legal category of pollutants separate from the six criteria pollutants for which National Ambient Air Quality Standards have been set. While no standards have been set for air toxics, EPA has identified 33 "priority" air toxics, which are found in many urban and/or high-vehicle traffic areas.

Sources of HAPs include automobile exhaust, power plants, refineries, gas stations, and many industrial and home-use solvents, coatings, material preservatives and other chemicals.

The EPA and states are monitoring levels of air toxics, and evaluating their sources and potential control measures.

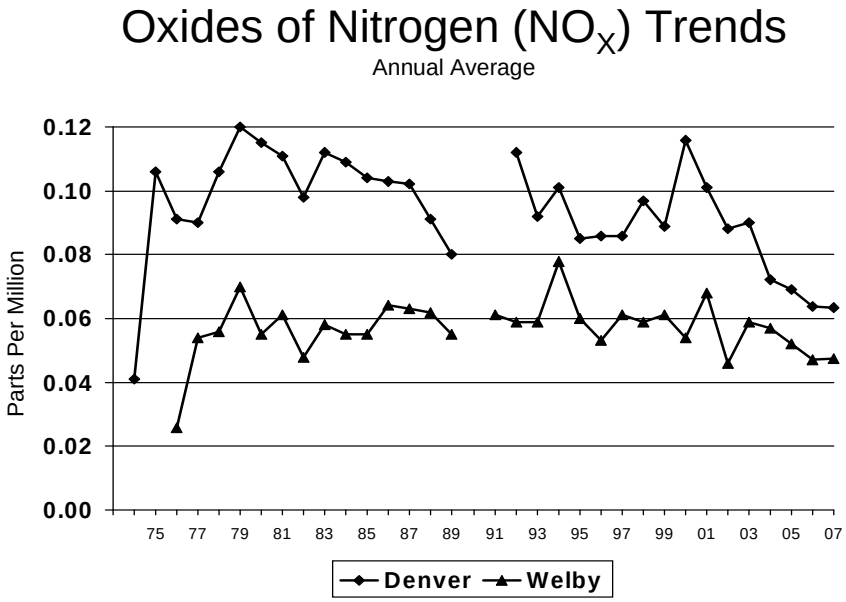
Colorado Department of Public Health and Environment staff are completing a risk assessment of air toxics at five sites in Colorado, including three sites in Denver and two in Grand Junction.

In addition to monitoring and inventory work, the Air Pollution Control Division works to reduce air toxics through a variety of programs, including requiring fees for emissions from stationary sources; automobile inspection and maintenance programs; and the Mercury-free Colorado program. A new effort to expand diesel school bus retrofitting statewide also is in development.

NOx pollution contributes to ozone, haze

Nitrogen oxides (NOx) is the generic term for a group of highly reactive gases that contain nitrogen and oxygen in varying amounts. NOx play a major role in the formation of ozone, particulate matter, haze and acid rain.

Ninety-five percent of NOx are made up of Nitrogen dioxide (NO2) and nitric oxide (NO). NO2 is a reddish brown, highly reactive gas that is formed in the ambient air through the oxidation of NO.



Reductions in emissions of NOx in some cases can lead to an increase in ozone. This is due to the complex chemistry of ozone formation. In the immediate vicinity of the NOx emissions, NO scavenges ozone. However, the NO2 that is formed can photolyze and reform ozone further downwind.

The major sources of man-made NOx emissions are high-temperature combustion processes such as those that occur in automobiles and power plants. Home heaters and gas stoves can also produce substantial amounts of NO2 in indoor settings.

Health and Environmental Effects

NOx react in the air to form ground-level ozone and fine particle pollution, which are associated with adverse health effects.

NOx can increase respiratory problems, cause mild symptomatic effects in asthmatic individuals and increase susceptibility to respiratory infections.

NOx contribute to a wide range of environmental effects directly and when combined with other precursors in acid rain and ozone.

Increased nitrogen inputs to terrestrial and wetland systems can lead to changes in plant species composition and diversity. Similarly, direct nitrogen inputs to aquatic ecosystems can lead to eutrophication (a condition that promotes excessive algae growth, which can lead to a severe depletion of dissolved oxygen and increased levels of toxins harmful to aquatic life). NOx also contribute to visibility impairment.

Trends in NO_2 Levels and NOx Emissions

NOx are monitored at two sites in Colorado: downtown Denver's CAMP station and in Welby just north of Denver. Monitoring results show no significant trend in NOx since monitoring began in 1974, though NO_2 shows a downward trend in Colorado (see additional graph on page 2).

Nationally, monitored levels of NO_2 have decreased 21 percent. Nationally, average NO_2 concentrations are well below the NAAQS and currently are at the lowest levels recorded in the past 20 years. During the past 20 years, national emissions of NOx have declined by almost 15 percent.

Colorado's air quality management plans

During the 1970s and 1980s, the U.S. Environmental Protection Agency (EPA) designated many Colorado cities and towns as nonattainment areas because the areas violated nationwide air quality standards. By the mid-1990s, all these areas came into compliance with the various standards.

All areas have been redesignated, but due to persistent ozone problems a nine-county Front Range area was designated nonattainment for the 8-hour ozone standard in 2007and a plan is being developed to bring the area into compliance.

Colorado Governor Bill Ritter issued several challenges to the Denver metropolitan area's Regional Air Quality Council in 2007 to propose a plan that would provide better public health and environmental protection from ozone sooner than would otherwise be required under the federal program.

State Implementation Plans (SIPs) are the plans that bring nonattainment areas into compliance with air quality standards. These plans describe the nature of the air quality problems and the probable causes. The plans show projections of future pollutant levels and identify strategies to reduce these pollutants to acceptable levels. The plans can be viewed online at www.cdphe.state.co.us/ap/attainmaintain.html.

8-Hour Ozone Nonattainment Area

Location	Year of Redesignation by EPA
North Front Range	Plan pending

1-Hour Ozone Attainment Area

Location	Year of Redesignation by EPA
Denver	2001

Ozone Early Action Compact Plan

Location	Year of Approval by EPA
Front Range Ozone Area	2005

Lead Attainment Area

Location	Year of Redesignation by EPA
Denver	1984

Carbon Monoxide Attainment Areas

Location	Year of Redesignation by EPA
Colorado Springs	1999
Denver	2002
Fort Collins	2003
Greeley	1999
Longmont	1999

PM10 Attainment Areas

Location	Year of Redesignation by EPA
Aspen	2003
Cañon City	2001
Denver	2002
Lamar	2005
Pagosa Springs	2001
Steamboat Springs	2004
Telluride	2001

Nitrogen Oxide Attainment Area

Location	Year of Redesignation by EPA
Denver	1984

Colorado Air Quality Control Commission

www.cdphe.state.co.us/op/aqcc/

The Colorado Air Quality Control Commission has among other responsiblites the development and adoption of a regulatory program to protect and improve air quality in Colorado. Typically, the commission is involved in the maintenance of the regulations through modification and revision. Much of the air quality management program currently is in place and has been adopted over time. New programs are occassionally considered by the commission as needed to address specific problems.

The commission oversees the implementation of the air quality programs. The commission is responsible for hearing appeals of the Air Pollution Control Division's implementation of the programs through permit terms and conditions and enforcement actions.

Colorado's air quality management program regulates air pollutant emissions from stationary industrial sources, cars and light duty trucks, burning practices, street sanding and sweeping activities, and the use of prescribed fire.

The air quality program also is focused on visibility, odor and transportation planning impacts to future air quality.

Commission meetings typically are conducted on the third Thursday of each month and may extend into the next day. The commission encourages members of the public to attend these meetings and express their views.

Ozone reduction efforts underway

Ozone is a secondary pollutant, not directly emitted from sources, but formed from chemical reactions of several pollutants in the air. High levels of ozone present health concerns for both healthy adults and for sensitive people, especially the elderly, young children and those with asthma and respiratory ailments.

The national standard for ozone has been revised several times to be more protective of human health. Compliance with the national standard has presented challenges for Colorado, particularly along the Front Range and in the Denver metropolitan area.

Elevated ozone levels kept the Front Range at the edge of nonattainment of the federal standard for many years, with levels that exceeded the standard in 1998 and 2003. In 2004 EPA deferred a nonattainment designation to give Colorado a chance to meet the standards through an accelerated ozone action plan. Unfortunatley, high ozone levels during the summer of 2007 led to another violation of the federal ozone standard, resulting in a nonattainment designation from the US EPA.

Elevated ozone levels are caused by traffic growth and industrial growth combined with meteorological conditions that create ozone.

Colorado Governor Bill Ritter issued several challenges to the Denver metropolitan area's Regional Air Quality Council to propose a plan that would provide better public health and environmental protections sooner than would otherwise be required under the federal program.

Ozone Formation

Ground-level ozone is not emitted directly into the air, but forms when emissions of, primarily, nitrogen oxides (NOx) and volatile organic compounds (VOCs) react with sunlight to form the pollutant. Weather is often considered the most significant factor of ozone formation. Hot stagnant days with upper atmospheric high-pressure systems tend to favor ozone production and increased ozone concentrations. The role of weather helps to explain why some summers have high ozone levels while other summers have relatively low levels.

Power plants, motor vehicle exhaust, industrial facilities, oil and gas operations, gasoline vapors and chemical solvents are the major human-made sources of the NOx and VOC emissions. Reducing VOC emissions tends to provide a direct benefit to ozone reduction. Reducing NOx emissions can lead to localized increases in ozone, but overall contributes to reduced ozone formation.

Violation of Standard

The highest levels of ozone have been monitored in the Front Range Area, with violations of the federal 8-hour ozone standard in 2003 and 2007. However, relatively high ozone levels have been recorded in many areas of the state. Prior to 2003 and 2007 the Denver metro area violated the 1-hour federal ozone standard in 1987.

In April 2004, EPA designated the Denver and North Front Range area (Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, Jefferson and parts of Larimer and Weld counties) as nonattainment for the 8-hour ozone standard. EPA deferred the federal requirements because of a commitment from the State of Colorado, the Regional Air Quality Council and others to implement ozone control measures to return the area to compliance with the federal standard sooner than would otherwise be required by the Clean Air Act.

In July 2007 the Denver/North Front Range Area violated the federal standard of .085 parts per million (ppm) of ozone and EPA subsequently designated the area as nonattainment in November 2007, requiring Colorado to develop a plan to demonstrate long-term compliance with the federal standard. This plan must bring the area into compliance with the .085 ppm federal standard by the end of 2010.

Nonattainment Implications

A federal designation of nonattainment means that an area is exceeding the value of the federal standard at one or more of the monitoring stations in the area several times per year, usually in the summertime season. The nonattainment designation also means that citizens are at risk of being exposed to higher levels of ozone in their normal daily activities. The federal nonattainment desig-

nation imposes additional restrictions on transportation planning, permitting of new and expanded sources of air pollutants, and greater federal oversight of air quality management. Once designated as nonattainment state and local governments are required to develop and submit plans for approval to reduce pollutant concentrations and show how they will be maintained at acceptable levels for two ten-year planning periods.

Governor's Challenge

Shortly after Colorado violated the standard in July 2007, Governor Bill Ritter issued a challenge to the Denver metropolitan Regional Air Quality Council to propose a plan to the Commission to do more than simply comply with the federal ozone standard, and to do it sooner than would otherwise be required.

The Regional Air Quality Council has developed many plans in the past in its role as the lead air quality planning agency for the Denver metro area. The Regional Air Quality Council is working with the North Front Range Transportation and Air Quality Planning Council to develop a proposal for the Commission's consideration at a December 2008 rulemaking hearing.

The Governor challenged the Regional Air Quality Council to:

- Propose measures to reduce ozone further in the 2008 summer season,
- Submit a proposed plan to the Air Quality Control Commission by September,
- Set a goal of reducing or eliminating ozone levels above 80 parts per billion,
- Consider further ozone reductions to meet EPA's newly issued ozone standard.

In 2008 more stringent vehicle emission cutpoints were put into effect, a program to detect high emiting vehicles began in Denver, stricter regulations on the oil and gas industry went into effect, and a public outreach program by the RAQC promoted voluntary efforts.

Ozone Plan

The ozone plan will contain emission control measures that will become federally enforceable as well as emission control measures that will be reserved for enforcement by the state only. Keeping some emission control measures as "state only" maintains state flexibility to make future changes to the program. Otherwise, changes to the plan would require federal approval.

The ozone plan will define how the region will demonstrate compliance with the federal ozone standard and the specific emission reduction measures that will be relied upon to achieve this goal. Emissions reduction measures being considered at the time of this report's development include:

- Removal of existing exemptions from sources not required to meet VOC limits,
- Further reducing emissions of NOx from large stationary sources,
- Requiring stricter permitting and emissions control requirements for new or modified sources of VOC and NOx emissions,
- Reducing emissions from new and existing oil and gas development storage and handling equipment,
- Vehicle emissions inspection and maintenance programs in the North Front Range,
- Lower volatility fuels,
- High emitting vehicle identification and repair programs.

The ozone plan will rely on the emission reductions to be realized from the continued implementation of several federal programs, primarily mobile source programs. Vehicle fleet turnover will bring new pollution control technologies into the fleet on the road and will provide a significant benefit to reducing ozone concentrations in the Front Range region.

The focus of the ozone plan is to return the Denver/North Front Range area to compliance with the federal standard. However, emission reduction programs are being considered statewide. Statewide reductions will prevent ozone nonattainment from occurring in other areas of the state and will improve Front Range air quality.

The ozone plan will define how the nonattainment area will achieve reduced ozone concentrations to meet the federal ozone standard by December 2010 and will demonstrate long-term compliance with the federal standard. The plan will also include emission reduction strategies that drive the region's ozone concentrations even lower toward the level of the newly-issued federal ozone standard.

New Ozone Standard

In March 2008 EPA issued a new, more stringent, ozone standard. The standard continues

with an 8-hour averaging time and will be measured as an average of the fourth-highest values over a three-year period. The numerical value of the standard has been tightened from 0.08 parts per million to 0.075 parts per million. Many monitoring locations in the Front Range are projected to violate the new standard based on historical data. Monitoring locations elsewhere in the state appear to narrowly meet the new standard.

If the Denver/North Front Range region violates the new standard the state will be required under the federal Clean Air Act to submit a plan to EPA to show how the Denver/North Front Range area will demonstrate long-term compliance with the new federal standard.

The plan will likely be due in 2013. EPA will set a date for compliance with the new standard in a separate rule.

EPA adopted the new ozone standard as a part of its requirement to review all National Ambient Air Quality Standards every five years to determine if the standards are protective of public health and the environment.

Ozone Monitoring and Analysis

Six new ozone monitors have been installed during the past year by the division in areas where ozone is a concern. Three of these monitors are on the Western Slope in Palisade, Rifle and Cortez. The others are in Aspen Park, Masonville west of Fort Collins, and at the Aurora Reservoir. Fifteen pre-existing ozone monitors are operated by the division in the Front Range. Many other ozone monitors are operated in Colorado by other agencies or individiduals.

While ozone is understood to primarily be a summertime problem caused by hot, stagnant air that bakes pollutants, ozone has also been observed in the winter. “Cold pools” can form in valleys where pollutants are trapped in shallow layers where sun reflection from snow leads to high ozone levels. While these conditions have been observed in oil and gas development areas in Wyoming, more study is needed to better understand the phenomenon.

Oil and gas industry included in ozone plan

The oil and gas industry is the largest source category of human-caused ozone precursor emissions in the state. The industry made up 40 percent of human-created VOC emissions statewide in 2006, and is projected to make up 54 percent of those emissions in 2010.

The industry is developing rapidly, especially in western Colorado. The Colorado Oil and Gas Commission issued 6,368 drilling permits in 2007, up from 2,245 in 2003.

On the Western Slope, a significant amount of the development activity is taking place in Garfield County. On the Front Range, Weld County makes up the majority of well sites. These two counties also have the highest levels of VOC emissions from the oil and gas industry.

Emissions sources from oil and gas development sites include condensate tanks, dehydrators, reciprocating internal combustion engines and valves.

Emission Controls

The Air Quality Control Commission has taken action since 2004 to address the impact of emissions from the oil and gas industry, including:

- 2004: Condensate tanks, dehydrators and existing engines controls for the Front Range,
- 2006: Additional condensate tank controls for the Front Range and statewide controls for dehydrators, condensate tanks and new engines.

Control strategies specific to the oil and gas industry are being considered in the ozone planning process. These include:

- Increase condensate tank controls to 95 percent of emissions controlled,
- Require low/no bleed valves on all new and existing pneumatic valves,
- Place statewide controls on existing reciprocating internal combustion engines.

Environment and Public Health

The Colorado Oil and Gas Conservation Commission, the industry’s main regulatory body, has been adopting rules to implement laws passed in the last legislative session requiring that the environment, wildlife and public health and safety be given more consideration when approving new development.

What you can do to prevent air pollution

Everyone has an important part to play in reducing air pollution. Here are a few suggested ways you can make a difference in your own community.

On the Road

- Drive a fuel efficient and low polluting vehicle.
- Keep your car tuned up and tires well inflated to increase mileage and reduce the need for refueling.
- Refuel in the evening, so fuel vapors will not have a chance to "cook" into ozone.
- When refueling, stop at the click — when the nozzle clicks off. Don't overfill or drip fuel. Fuel creates ozone-causing vapors as it evaporates.

Reduce Driving

- Delay trips.
- Combine errands into one trip.
- Shop close to home.
- Carpool.
- Walk or bike.
- Use public transportation.
- Telecommute or teleconference.

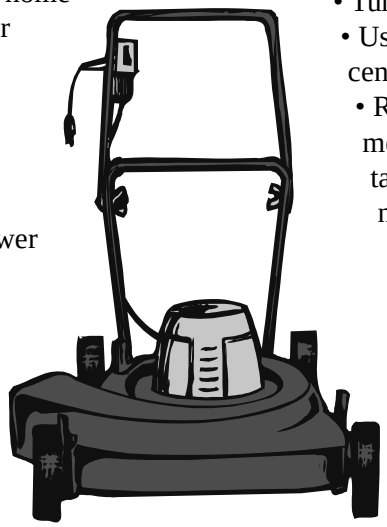
Around the Yard

- Wait till evening to mow when cooler temperatures create less ozone.
- Use a new earth-friendly lawn mower — an electric- or battery-powered mower, a non-motorized push mower, or a new gasoline-powered mower.
- Maintain your mower to help it run cleaner — change the air filter, oil and spark plugs at least once each season. Keep the underside of the mower free of grass build-up.
- Avoid using two-stroke gasoline-powered yard equipment, such as weed trimmers, since they emit a disproportionate share of air pollution.
- Use a funnel to refuel equipment — avoid even small spills and drips.
- Reduce lawn watering and fertilizing to discourage excessive lawn growth.
- Xeriscape to reduce lawn area, or change to native Western grasses to reduce the need for irrigation and mowing.
- Plant trees. Trees not only add oxygen, they reduce dust and act as natural heat contollers, providing shade in the summer and allowing sunlight in the winter.
- Choose an alternative to charcoal grilling.
- Don't use charcoal lighter fluids, which emit harmful vapors. Use an electric starter or charcoal chimney instead.

Around the House

- Avoid solvent-based products, which have pollution causing vapors. Use water-based paint, stain and sealants.
- If you must use a solvent-based product, avoid using it on ozone action alert days or use it in the evening.
- Avoid spray paints, most of which are solvent based. Very fine spray also can become airborne. Use paint brushes and rollers instead.
- Tightly cap all solvents (gasoline, paint thinners, strippers, degreasers) and store in a cool place to avoid evaporation.
- Plan major painting, stripping and refinishing projects for spring and fall to avoid summer heat and sun which react with vapors to create ozone pollution.
- Avoid use of flammable household products, such as some floor wax, furniture polish, fabric cleaners and insect foggers, most of which contain solvents.

• Don’t burn wood, including in-home woodburning stoves or outdoor burning devices. If you must burn use only EPA certified devices for low emissions.



Conserve energy

If we use less energy the power plants burn less coal and oil.

• Insulate and weatherstrip.
• Take quick showers. They use less hot water than baths.
• Close doors to unused rooms and don’t heat or cool them.
• Keep your home cooler in the winter and warmer in the summer.
• Wash clothes in cold water.
• Hang laundry out to dry instead of using a clothes dryer.
• Run dishwashers and washing machines only when there is a full load.
• Turn off unused lights and appliances.
• Use fluorescent lights instead of incandescent bulbs.
• Recycle everything you can (paper, glass, metal cans, aluminum and plastic). It takes less energy to recycle than to create new material.

Get Involved

• Get involved in your local government processes related to air pollution and offer your input.
• Visit websites listed in this report to learn more about air pollution.
• Pay attention to news reports about air pollution and follow the suggestions listed here on high pollution or ozone alert days.
• Report problems. If you think you see an air pollution problem report it to your local or state agency.

Vehicle emissions inspection program

The following is a summary of the automobile Inspection and Maintenance Program for 2007. A more detailed report can be requested by calling (303) 692-3125 or viewed on-line at: www.cdphe.state.co.us/ap/down/IMreport.pdf.

The Automobile Inspection and Maintenance (AIR) Program's purpose is to reduce motor vehicle-related pollution through the detection and repair of high-emitting vehicles. Motor vehicles are a major source of hydrocarbons (HC) and nitrogen oxides (NOx) and a predominant source of carbon monoxide (CO) in the Denver metro area.

Program Requirements

Emission testing of gasoline vehicles is required when registering, renewing registrations, or selling vehicles more than three model years old, within the seven county Denver Metro Area.

The environmental benefit from the program is derived primarily from the emission reductions when vehicles failing the initial test are repaired, with additional benefit from pre-inspection maintenance and repair to ensure compliance with program requirements.

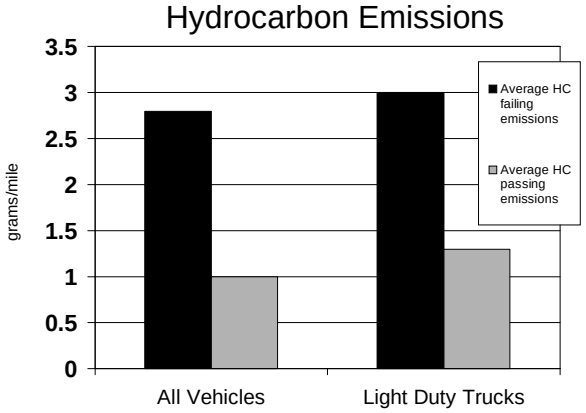
While most vehicles pass the testing requirements, the vehicles that fail disproportionately contribute to the overall emissions of the vehicle fleet.

The AIR Program consists of three types of vehicle emissions tests: the I/M 240 test, which applies to 1982 and newer light-duty gas vehicles; the two-speed idle test, which applies to 1981 and older gas vehicles, heavy-duty gas vehicles and gasoline fleet vehicles; and the clean screen test using remote sensing technology, which is used to exempt out vehicles that would otherwise be required to pass an I/M 240 test.

Each of these tests is designed to measure a vehicle's emissions, but do so in very different ways. The I/M 240 is a four-minute test that measures tailpipe CO, HC and NOx emissions on a mass basis. The test is run on a dynamometer to simulate driving conditions. Emissions established during the test, expressed in grams of pollutant per mile driven, are compared against established cutpoints for vehicle type and model year to determine whether the vehicle has passed or failed.

The two-speed idle test also measures tailpipe CO, and HC emissions, but does so based on the concentration of the emissions in the exhaust stream. The test is run with the engine at idle, with no load, rather than under simulated driving conditions. In addition to the tailpipe portion of the tests, vehicles undergoing I/M 240 and two-speed idle testing must also pass a visual inspection of the emission control equipment and a gas cap inspection designed to ensure that there is not excessive leakage of gas vapors.

The clean screen test uses remote sensing technology to measure a vehicle's CO and HC exhaust emissions as the vehicle is driven on a public roadway. Unlike the I/M 240 or two-speed idle tests, the clean screen test is not used to fail vehicles. Instead, the test is used to identify clean vehicles, which are then exempted from the requirement to undergo I/M 240 testing.



Program Results

During 2007, approximately 742,000 vehicles underwent I/M 240 and 73,000 vehicles underwent two-speed idle tests. Among these vehicles, 5.8 percent failed the I/M 240 test, and 11.4 percent failed the two-speed idle test.

Based on the EPA approved MOBILE6.2 emission modeling, the AIR Program resulted in a 6 percent HC reduction, a 10.8 percent CO reduction and a 1.8 percent reduction of NOx for the entire fleet on a typical summer day. This equates to a 6.6 ton per day (tpd) HC reduction, a 103.72

tpd CO reduction and a 1.9 tpd NOx reduction. Modeling results for a winter day show a CO reduction of 141 tpd.

I/M 240 test data for 2007 show a 12.6 percent reduction in HC and a 15.9 percent CO reduction over the entire year, but because of a number of limitations in this data, the tested reductions do not necessarily indicate that MOBILE6.2 is underestimating emission reductions from the program.

Cost of Program

The estimated net cost of the AIR Program for 2007 was $26.4 million dollars based on inspection and registration fees, the estimated cost to repair vehicles and the estimated fuel savings from required repairs. Based on these estimated costs and benefits, the cost effectiveness of the program for 2007 was $7,070 per ton of ozone precursor during the summertime ozone season, and $513 per ton of CO during the wintertime CO season.

The program made significant strides in increasing the use of remote sensing in 2007. For the year, 109,014 vehicles were screened by remote sensing and identified as clean. This compares to 43,095 vehicles in 2006 and 19,293 vehicles in 2005. The growth in remote sensing has significantly improved the convenience of the program to the motoring public.

Future Changes

In October 2007, the Air Quality Control Commission promulgated regulations for the implementation of a pilot program to use remote sensing to identify high emitting vehicles. The Air Pollution Control Division began implementing the pilot program in December 2007 and will continue to operate the program throughout 2008. The division will periodically update the commission on the progress and effectiveness of the program.

Implementing effective air quality programs

The Air Pollution Control Division

www.cdphe.state.co.us/ap/

The Air Pollution Control Division is responsible for implementing the air quality management programs adopted by the Air Quality Control Commission and acts as staff in the regulatory development process. The division is housed within the Colorado Department of Public Health and Environment. This section of the report includes a description of each of the air quality management programs and highlights of recent work.

Mobile Sources

- Automobile Inspection and Maintenance Program
- Alternative Fuels
- RapidScreen Program
- Diesel Emissions Control
- Oxygenated Gasoline Program

The Mobile Sources Program controls and reduces motor vehicle emissions that contribute to air quality degradation. The program evaluates, investigates, and administers programs aimed at improving vehicle emissions. It conducts research, modeling and planning on the causes and effects of mobile source air pollution.

The staff jointly administers the Automobile Inspection and Readjustment (AIR) Program in the seven-county Denver metropolitan area with the Colorado Department of Revenue, along with solely administering two separate diesel opacity inspection programs, one designed for large fleets, and the other for individual diesel vehicles. As part of the AIR program, mobile sources innovated the use of remote sensing technology in its "clean-screen" program, and is currently piloting a remote-sensing based high-emitter program.

The Mobile Sources Program is involved in understanding the contribution motor fuels play in mobile source emissions and their affect on air quality. As a result, an oxygenated gasoline program reduces wintertime carbon monoxide emissions from gasoline powered cars and trucks. More recently, the program has focused on the effect fuel volatility has on ozone precursor emissions.

The Aurora High Altitude Vehicle Emissions Laboratory conducts nationally recognized vehicle emissions testing.

The program also operates a series of vehicle technical centers in support of the AIR Program. These centers provide customer assistance to motorists failing emissions inspection, and outreach to the public and vehicle repair industry. The center's technicians are recognized experts in their field and contribute to ensuring that the motor vehicle repair industry has access to the latest technical information on vehicle emissions repair procedures and technology.

Planning and Policy

- Emissions Program Public Information
- Community-Based Air Quality Protection
- Environmental Education
- High Pollution Advisory Program
- Natural Events Action Plan
- Nonattainment/Maintenance Air Quality Planning
- Pollution Prevention
- Transportation Planning

The Planning and Policy Program is responsible for a cross-section of air quality planning, policy, education and community outreach tasks. Included among the program's responsibilities are: air quality plan development and implementation; assisting in the development of transportation conformity analysis; participating in air-quality-related transportation planning; policy development; community-based environmental protection; pollution prevention; public information; and air quality education in schools.

Stationary Sources

- Construction Permit Program
- Inventory Program
- Operating Permit Program
- Field Services Program
- Hazardous Air Pollutants
- Oil and Gas Team
- Regulatory and Compliance Assistance Program
- Wood Stove and Open Burning Programs

The Stationary Sources Program evaluates and develops permits for stationary sources such as gas stations, dry cleaners, auto finishers, electric utilities, mining operations, construction projects and oil and gas development sites. Staff members inspect these sources to determine their compliance with regulations and permit conditions, and maintain a computerized inventory of air pollution emissions in Colorado. The Stationary Sources Program is working to streamline permitting through the use of general permits and improve compliance by using self-certification in conjunction with traditional inspection programs.

More than 10,500 sources are registered in Colorado, and the Stationary Sources Program administers inventory and permitting programs to ensure federal and state regulations are met. The Stationary Sources program operates robust compliance assistance and small business assistance programs emphasizing pollution prevention to improve regulatory compliance.

Indoor Air Program

- Asbestos Control Program
- Chlorofluorocarbon Program
- Indoor Air Quality
- Lead Based Paint Abatement Unit

The Indoor Air Program provides technical assistance on indoor air pollutants. The program also regulates ozone-depleting compounds (chlorofluorocarbons). Asbestos activities are included within the program through the regulation of asbestos removal and demolition activities, and the review of school asbestos management plans. The program also regulates the removal of lead-based paint from child-occupied facilities.

Technical Services

- Ambient Air Monitoring
- Modeling, Meteorology and Emission Inventory Unit
- Visibility Program
- Smoke Management Program

The Technical Services Program is responsible for the collection and analysis of ambient air quality data throughout the state. Particulate and gaseous monitors are operated in many Colorado communities to keep track of air quality trends, population exposure to pollutants and compliance with air quality standards.

The program also is responsible for providing complex air quality modeling analysis to determine the impacts various sources of air pollution will have on air quality. These models are used to create and evaluate air pollution control strategies for State Implementation Plans to meet federal air standards. The modeling provides a basis for health risk assessments.

The program manages the state's visibility program to protect visual air quality in both urban and rural areas, including national parks and wilderness areas.

The program manages smoke through a burn permit process and by working with fire managers to review and approve plans and practies for controlled burns.

The program maintains real-time and historic air quality data on the Internet at www.colorado.gov/airquality/.

Administrative Services

- Manages fiscal and business matters.
- Develops a comprehensive budget.
- Interacts with legislative processes.
- Ensures payment of bills.
- Develops contracts.
- Coordinates hiring.

The Administrative Services Program manages the business services of the division, including budgeting, billing, contracts, hiring and computer support.

Air quality management program highlights

Regional Haze

www.cdphe.state.co.us/ap/regionalhaze.html

EPA promulgated a regional haze rule in 1999 that directed states to develop plans to meet a national goal of protecting the visibility in national parks and wilderness areas by 2064. These national parks and wilderness areas are designated "Class 1 Areas" for regional haze reductions. Colorado has twelve Class I Areas, a number equal to the states of Oregon and Arizona, and only exceeded by California.

The pollution that causes regional haze comes from a number of sources including power plants, industrial sources, motor vehicles, energy development activities and natural sources such as wildfire. Small particles of soot, dust, sulfate and nitrate can be transported many miles to affect national parks and wilderness areas.

In 2007 and 2008 the Air Quality Control Commission held public hearings on the state's proposed plan for regional haze. The EPA rule requires the states to address several requirements in the plan.

First, certain types of major pollution sources that have minimum air pollution controls must install retrofit controls. This requirement is called Best Available Retrofit Technology (BART). Secondly, states must set "reasonable progress" goals for each Class I area to meet the 2064 national goal. Then, states must adopt measures necessary to meet these goals.

The commission in December 2007 held the first of two public hearings to adopt the air division's proposal for a Regional Haze State Implementation Plan (SIP). At this hearing, the commission approved all chapters of the plan except chapter eight and bifurcated the hearing to continue discussion on chapter eight in January 2008.

The portion of the plan approved by the commission was then approved by the Legislature and transmitted to EPA in June 2008.

The remaining portion of the plan, chapter eight, describes a process and schedule to address the "reasonable progress" requirement in the EPA rule. During the January rulemaking hearing, the commission vacated the proceedings and ordered the division to convene a stakeholder process to address requirements related to "reasonable progress."

In early 2008, four stakeholder meetings were convened, conference calls were held, and the division and stakeholders developed extensive technical materials.

To date, the result of this stakeholder process has been a full discussion about whether and how the division will propose a regulation to establish reasonable progress pollution controls for significant sources and reasonable progress visibility goals.

This process was put on hold in April 2008 to allow division staff to commit all resources to completion of the ozone SIP for the northern Front Range. When the ozone SIP is complete, work will continue on this phase of the regional haze SIP.

Four Corners Task Force

www.nmenv.state.nm.us/aqb/4C/

Members of the Four Corners Air Quality Task Force met on August 20 at San Juan College in Farmington, NM, to review progress in implementing established air quality priorities and a variety of other efforts either currently underway or planned.

The task force originally convened in 2005 to discuss the impacts that oil and gas production, existing and planned coal-fired power plants, growth and other factors are having on air quality in the Four Corners Region. The task force is a broadly representative group that includes federal land managers, federal and state environmental regulators, representatives from industry and tribal nations, and interested residents.

The task force concluded a two-year effort in November 2007 with the finalization of a report on a broad list of options for improving air quality in the region. The report is a resource for regulatory agencies to manage air quality impacts. The task force reconvenes periodically to check on progress. A future meeting has been planned for February 2009 in Durango, Colorado, to provide additional progress updates and discuss air quality modeling results.

Rocky Mountain National Park Initiative

www.cdphe.state.co.us/ap/rmnp.html

An initiative to improve air quality and reduce the effects of nitrogen and acidic deposition at Rocky Mountain National Park is continuing. For a number of years, the National Park Service has studied and expressed concerns about loss of visibility, increasing ozone concentrations, and nitrogen and acidic deposition at many national parks, including Rocky Mountain National Park.

An initiative to address air quality at the park began in 2004 that included participation from the Air Quality Control Comission, the Air Pollution Control Division, the National Park Service and the U.S. Enivronmental Protection Agency.

During the last several years the Rocky Mountain National Park Initiative compiled and analyzed data, and discussed emission control options. The focus of the initiative has been on nitrogen reduction.

The initiative most recently has been developing a contingency plan in the event that ongoing and expected pollution reduction efforts don't provide the improvements needed. Some of these expected improvements will come from new federal standards for motor vehicles, fuels and engines, and from regional haze and ozone reduction efforts now being addressed by the commission.

The initiative also has been researching and developing best management practices for the agricultural industry, which is a significant contributor to nitrogen impacts at the park.

Climate Action Plan

www.cdphe.state.co.us/op/aqcc/specialclimate.html

Colorado Governor Bill Ritter released The Colorado Climate Action Plan (CAP) in November 2007, which commits the state to reducing emissions of greenhouse gases by 20 percent from 2005 levels by 2020, and by 80 percent by 2050. The Air Quality Control Commission will be involved in helping to achieve those goals, as will all Coloradans.

The CAP includes the following efforts:

Agricultural Offset Carbon Market

A carbon dioxide emission reduction credit and trading program would give agricultural operators credits for carbon sequestration practices such as no till agriculture.

Greenhouse Gas Emissions Reporting

Colorado has joined The Climate Registry, a voluntary greenhouse gas emissions reporting system. The registry provides a mechanism for businesses, state agencies, local governments and others to voluntarily measure and report their greenhouse gas emissions.

Regulations seeking mandatory reporting of greenhouse gas emissions from major stationary sources will likely be proposed by the Colorado Department of Public Health and Environment to the Colorado Air Quality Control Commission in early 2009.

Mobile Source Emissions Reductions

The Governor has asked the Colorado Department of Public Health and Environment to assess Clean Car tailpipe emissions standards for new passenger cars and light duty trucks. The department is conducting broad stakeholder outreach and assessing the effect of federal legislation that strengthens mileage standards.

Western Climate Initiative

Colorado has joined the Western Climate Initiative as an "observer" to stay abreast of the development of a greenhouse gas emissions trading program that could eventually be implemented in Colorado. The trading program would establish a cap on greenhouse gas emissions.

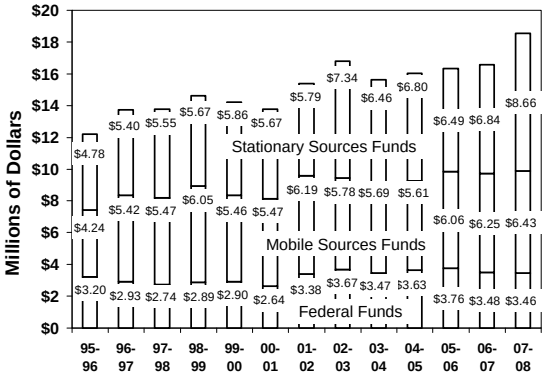
Renewable Energy and Efficiency Measures

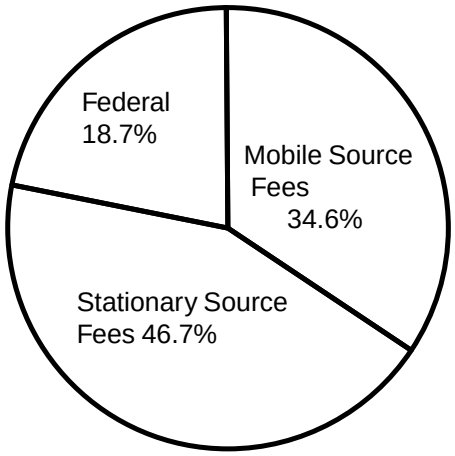
The Climate Action Plan includes a goal of reducing emissions from electric utilities by 20 percent. Meeting the state's renewable portfolio standard goal of 20 percent by 2020, and increasing energy efficiency in the utility sector are key to achieving that goal. The Governor's Energy Office (GEO) is establishing the Colorado Carbon Fund, a statewide voluntary carbon offset program to help finance new clean energy and greenhouse gas mitigation projects. GEO is also partnering with local governments, utilities, and non-profits to implement the ENERGY STAR New Homes program that helps homebuilders build energy efficient homes.

Air program fiscal data: July 2007-June 2008

Revenues: $18.54 million

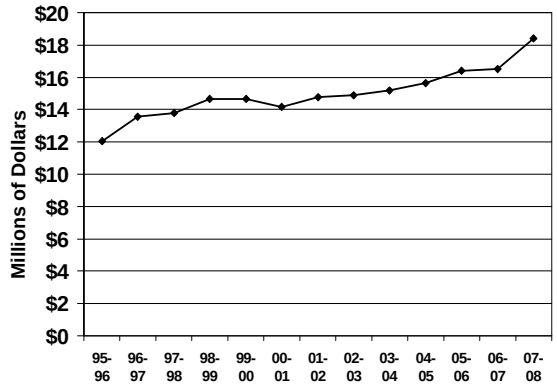
Revenue History

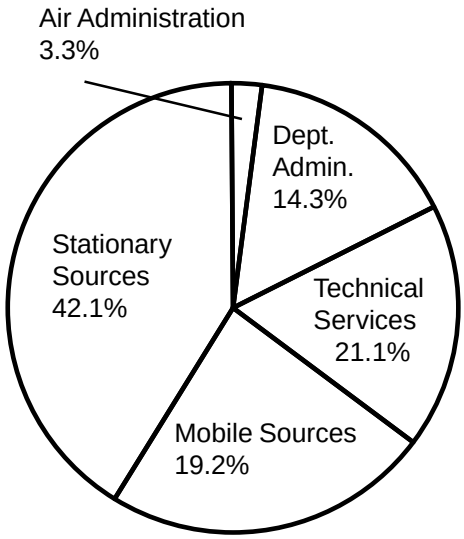




Expenditures: $18.42 million

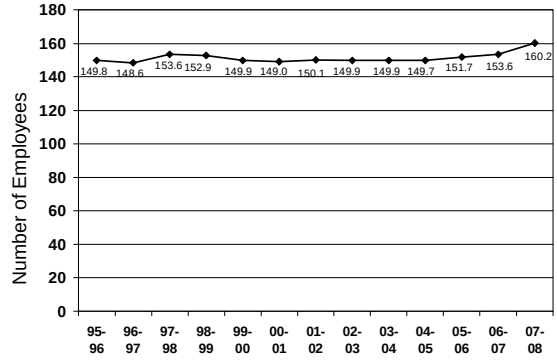
Expenditure History

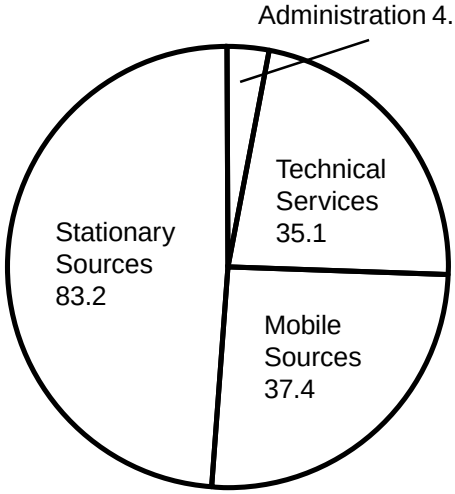




Number of Employees: 160.2

Employment Level History





Regional air quality perspectives

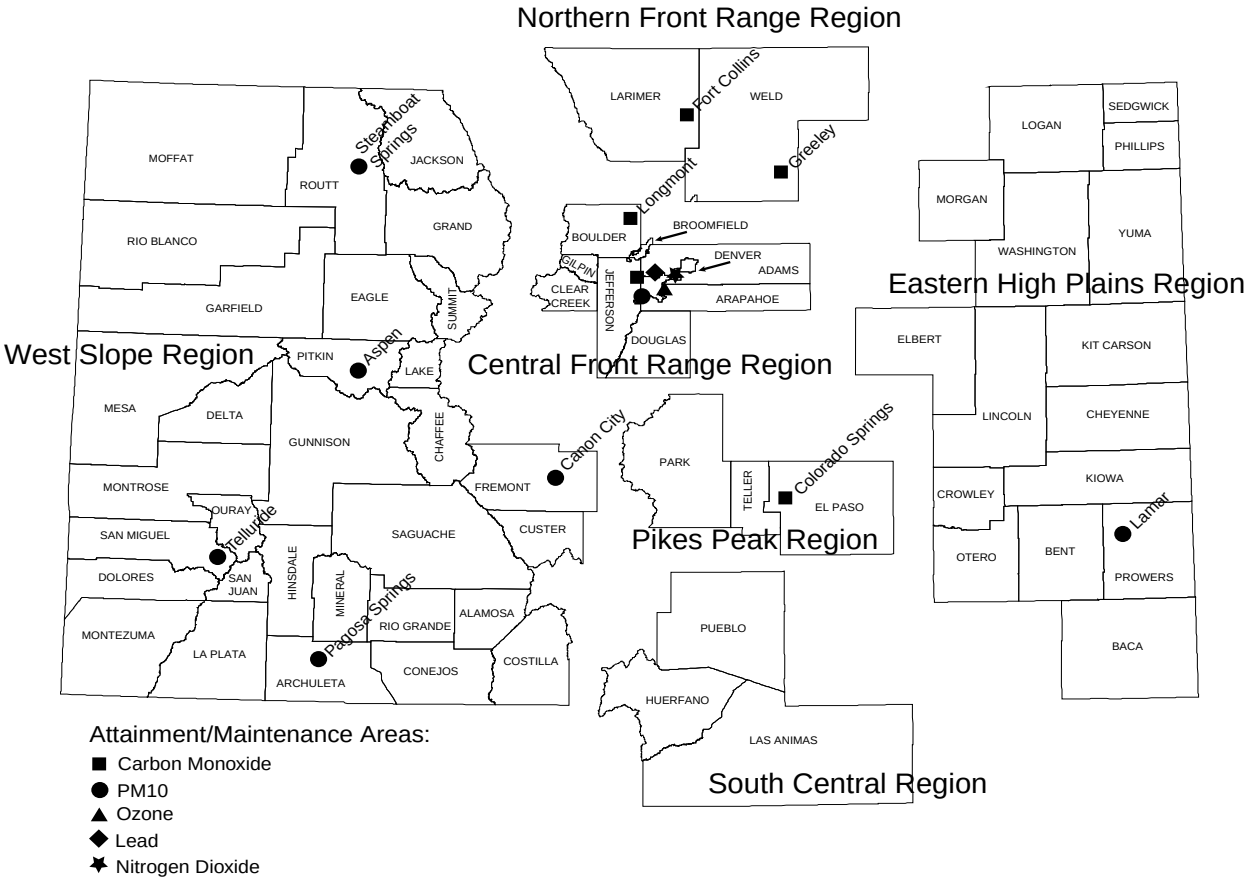
Areas of the state differ greatly from one another in landscape, weather conditions, population, motor vehicle traffic, amount of industry and burning practices.

This section of the report separates Colorado into six regions to more clearly address each region's specific air quality conditions and activities. Many local and regional environmental and planning agencies have submitted information for this section of the report.

The Air Pollution Control Division is the lead agency for implementing the state's air quality management program. However, it could not accomplish its work alone. Many local health departments and planning agencies throughout the state have air quality management programs which they operate either independently or under contract with the Colorado Department of Public Health and Environment.

Currently, the following local health departments have contracts with the department and division to perform specific air quality activities in their respective areas: Boulder County, Broomfield County, City and County of Denver, Delta County, El Paso County, Jefferson County, Larimer County, Mesa County, Montezuma County, Pueblo City-County, Routt County, San Juan County and Weld County.

In addition, the following organizations have been designated as the lead air quality planning entities in their respective areas: the Regional Air Quality Council (Denver-metro area), the Pikes Peak Area Council of Governments (Pikes Peak Region) and the North Front Range Transportation and Air Quality Planning Council (Fort Collins and Greeley areas).

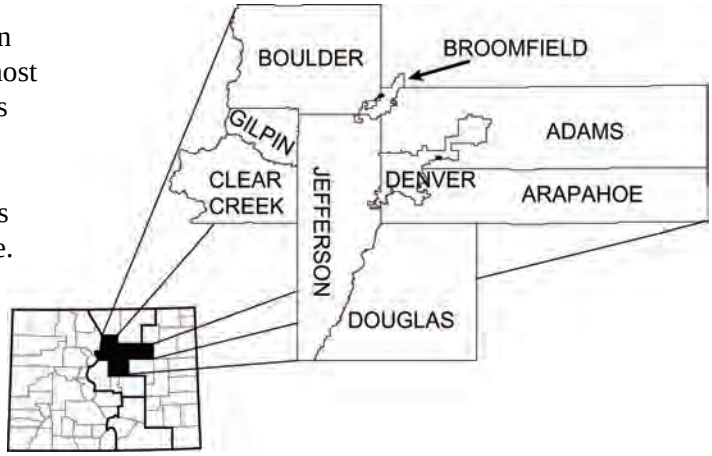


Central Front Range Region

The Central Front Range Region includes Adams, Arapahoe, Boulder, Broomfield, Clear Creek, Denver, Douglas, Gilpin and Jefferson counties. It has a population of 2.4 million (2000 census), most of whom live and work in the Denver-Boulder area. This region is the most densely populated in the state. The land varies from rolling prairie to rugged mountains.

In the past, the Denver-metropolitan area has violated health-based air quality standards for carbon monoxide, fine particles and ozone.

In response, the Regional Air Quality Council, the Colorado Air Quality Control Commission and the Air Pollution Control Division have developed, adopted and implemented air quality improvement plans to reduce each of the pollutants.



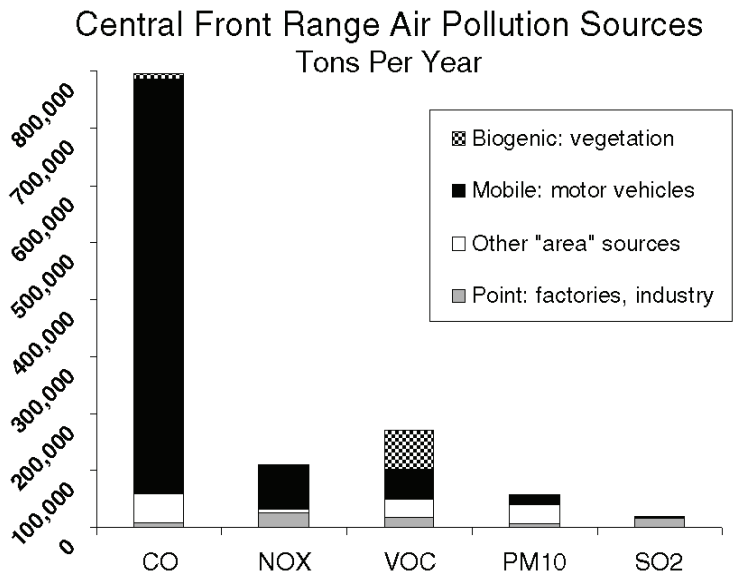
Air Pollution Sources

In the Central Front Range Region, air pollution comes from a variety of sources. Substantial emissions occur as a result of motor vehicle use.

In this area, the Regional Air Quality Council and a number of local health departments have air quality control programs.

Air Pollution Control Measures

The control of air pollution in the Central Front Range region has been the result of local, state, and federal programs that target emissions from automobiles and mobile sources, power plants and industrial sources, woodstoves, and emissions from street sanding and sweeping.



CO: Carbon Monoxide
NOx: Oxides of Nitrogen
VOC: Volatile Organic Compounds
PM10: Particles less than 10 microns in diameter
SO2: Sulfur Dioxide

Boulder County Public Health

www.BoulderCountyAir.org

Boulder County Public Health (BCPH) staff inspects a variety of stationary sources of air emissions to ensure compliance with state and federal regulations, and responds to air quality complaints such as odor, emissions, open burning, residential burning and fugitive dust through a contract with the Colorado Air Pollution Control Division.

Staff also inspects chlorofluorocarbon sources, such as motor vehicle repair shops, building air conditioning repair shops, and stationary air conditioning and refrigeration equipment. BCPH issues open burning permits and prescribed fire permits to residents and land management organizations within Boulder County.

BCPH operates and maintains an air quality monitoring network in the cities of Boulder and Longmont, as well as near Eldorado Springs in conjunction with the division and the U.S. Environmental Protection Agency (EPA). The network monitors ozone, particulate matter and carbon monoxide. Boulder County Public Health utilizes an integrated pollution prevention strategy in its work with businesses. Staff members help businesses save money and reduce environmental impacts, assist with permitting requirements, ensure compliance with air pollution regulations, and provide information to the public on a variety of issues.

In 2006, BCPH received a $500,000 grant from the EPA to study air toxics. Five monitoring locations across the county will provide information on the impact of upslope winds and mountains at the urban/rural interface. Previous studies have shown higher concentrations of hazardous air pollutants along the mountain ranges than in the urban plains and corridors. Monitoring has begun and preliminary results are pending.

BCPH coordinates the annual Clean Air Challenge contest in partnership with the Boulder County Clean Air Consortium, which includes members from the private and public sectors. Participants leave their cars at home during the summertime high-ozone season. The contest provides cash and other prizes to participants. Last year, participants reduced 134,000 miles of vehicle travel in three months.

BCPH provides consultation to the public regarding indoor air quality issues, assists other municipalities in resolving indoor air quality concerns, and provides the community with informational seminars on indoor air quality and methamphetamine lab cleanup.

Boulder County Public Health's Air Quality/ Radon Program continued research on radon in homes in Boulder County. In 2006, with a grant from the Colorado Department of Public Health and Environment, BCPH staff evaluated existing radon mitigation systems in 20 homes.

Boulder County Public Health promotes employee travel reduction programs, including walk/bike to work events, telecommuting/ teleworking, Ecopass mass transit passes and flexible work schedules. BCPH also participates in the Regional Air Quality Council's ozone outreach program and in the Rocky Mountain National Park Initiative Subcommittee with the Colorado Air Quality Control Commission.

-- Revised 2008

Denver Department of Environmental Health

www.denvergov.org/DEH/

Denver's air quality management program is conducted by the Environmental Quality Division (EQD). The EQD engages in technical advisory services for businesses; inspection and surveillance of air pollution sources; enforcement of city, state and federal environmental laws; and pollution prevention activities. EQD staff manages the city's air quality improvement programs; conducts air quality improvement projects; and responds to complaints about violations of the Colorado Indoor Air Quality Act for tobacco smoke.

The EQD implements state regulatory activities on behalf of the Colorado Air Pollution Control Division by contract. These activities include inspections and enforcement of air emission sources, chlorofluorocarbon sources and asbestos projects; operation of air quality monitoring stations; issuance of open burning permits; and response to air pollution complaints. Denver also protects ambient air quality through its smoking

and idling vehicle and residential burning ordinances, as well as a GreenFleets Executive Order, which reduces greenhouse gas emissions and fuel consumption through efficient management of the municipal fleet.

Denver continues to implement an industrial environmental review process that began in 1991. The process minimizes the community and environmental impact of pollutant emissions from new and expanding industrial operations. The EQD also has received grants to perform ambient air toxics monitoring, refine air quality modeling, and conduct education and outreach about vehicle idling. The EQD is also active in air quality rulemakings and stakeholder processes.

EQD supports Mayor John Hickenlooper's Greenprint Denver Initiative. Greenprint Denver is a long-term, citywide initiative to promote the importance of sustainable development and ecologically-friendly practices throughout the community. The EQD has partnered with the University of Colorado at Denver to develop a greenhouse gas inventory and implement the City's Climate Action Plan adopted in October 2007.

-- Revised 2008

Jefferson County Department of Health and Environment

www.co.jefferson.co.us

Jefferson County is the second most populous county in Colorado, with more than 527,000 residents. More than 770 square miles in size, the county stretches from suburban plains to the mountainous foothills more than 10,000 feet in elevation. Within this diverse area are a variety of potential air pollution sources, from large-scale manufacturing plants to dusty, unpaved mountain roads.

Each year, the Jefferson County Department of Health and Environment inspects a variety of stationary sources of air emissions to ensure compliance with state and federal regulations. Staff also inspect asbestos removal projects, and refrigeration and air conditioning businesses that use or handle chlorofluorocarbons. The department investigates citizen concerns about radon gas, indoor air quality and fugitive dust. Staff also issue open burning permits.

-- Revised Prior to 2008

Regional Air Quality Council

www.raqc.org

The Regional Air Quality Council (RAQC) is the air quality-planning agency for the seven county Denver-metropolitan area. The RAQC's mission is to develop effective and cost-efficient air quality planning initiatives with input from local governments, the private sector, stakeholder groups and citizens of the Denver-metro region. Its primary task is to prepare state implementation plans for compliance with federal air quality standards for ozone, carbon monoxide and particulate matter.

The council consists of 11 members appointed by the Governor. Five are citizen members selected for their knowledge of and interest in air quality and related issues. Two are local government representatives in the Denver area and one is a local government representative from the North Front Range area. One locally elected official represents the Denver Regional Council of Governments. The two remaining members are executive directors of the Colorado Department of Public Health and Environment and the Colorado Department of Transportation.

The RAQC also coordinates several voluntary emissions reductions programs. One of those is a summer ozone outreach, awareness and education program in place since 1999 in an effort to keep the Denver area in compliance with the federal ozone standard. In addition, the RAQC also coordinates a large diesel emissions reduction program focused on retrofitting large diesel engines including both on- and off-road vehicles.

-- Revised Prior to 2008

Air Quality Index for metro Denver

The Air Pollution Control Division uses an air quality reporting method called the Air Quality Index (AQI). The Air Quality Index provides health officials with a simple, uniform way to report daily levels of air pollution.

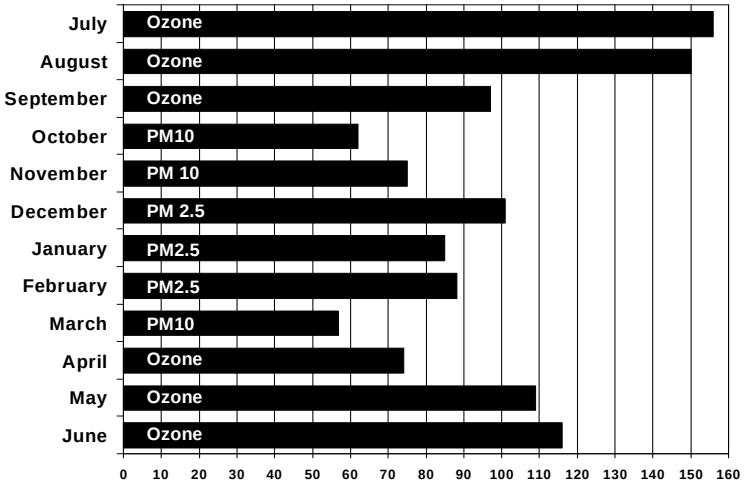
Year round, division staff collect current information about the levels of carbon monoxide, ozone and fine particles for index reporting.

After analyzing the data, staff convert the information into numbers on the Air Quality Index scale. On this scale, the National Ambient Air Quality Standards equal 100 for carbon monoxide, ozone and PM10, and 150 for PM2.5. Air Quality Index readings greater than these values indicate exceedances of a pollutant's standard.

The bar chart on the right shows the monthly maximum index levels recorded during a recent 12-month period in the Denver-metro area. In each bar is the pollutant that caused the monthly maximum.

Denver-metro maximum AQI readings with predominant pollutant identified

July 2007 through June 2008



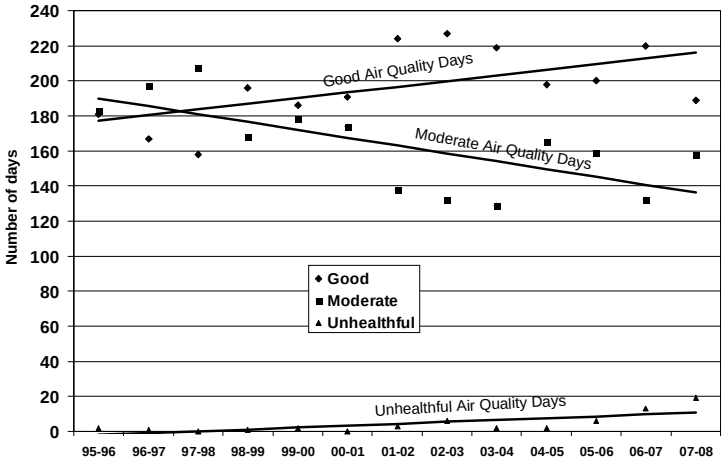
Trends in Denver-metro area Air Quality Index

The Air Quality Index (AQI) is divided into six air quality categories. These include good, moderate, unhealthy for sensitive groups, unhealthy, very unhealthy and hazardous.

According to the index, any reading between 0-50 indicates good air quality, 51-100 moderate air quality, 101-150 unhealthy for sensitive groups, 151-200 unhealthy, 201-300 very unhealthy and above 300 hazardous air quality.

The chart to the right summarizes and compares index readings for the past 12 years.

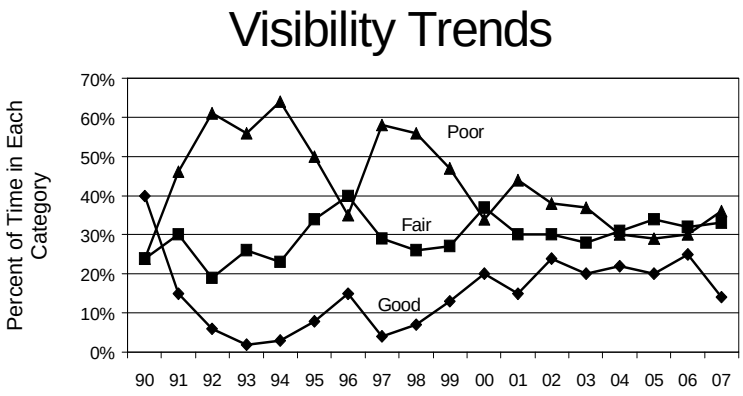
Denver-metro maximum AQI values



The Visibility Standard Index for metro Denver

The visible aspect of air quality is reported by the Visibility Standard Index. The visibility standard is set at an extinction of 7.6 percent or more of light in a kilometer of air over a four-hour average from 8 a.m. to 4 p.m. The standard was set by 200 Denver area citizens and adopted by the Colorado Air Quality Control Commission in 1989.

A monitor called a transmissometer measures visibility. Readings between 0-50 are good, 51-100 fair, 101-199 poor and 200-plus extremely poor. The chart at right shows the percentage of time in each category. On the visibility scale, a value of 101 is "poor" and equates to the .076/km standard.



Determining the Visibility Standard Index reading can be complicated by precipitation, relative humidity of 70 percent or greater, fog, blowing dust, smoke, etc. When such conditions are present, readings are excluded.

Trends Show Improvement in Visibility Over Time

While Denver and other Front Range cities continue to experience visibility problems and haze, visible air pollution has decreased in recent years and more improvements can be expected in the future.

Clear visibility and impaired visibility in the Denver basin — a view looking south into the metro area from a division monitoring site during two days of June 2000.

In 2003 the Air Pollution Control Division reprocessed its visibility data and determined that a 28 percent improvement in visibility had occurred since 1991. This improvement can be attributed to cleaner burning motor vehicles and fuels, reductions in residential burning, reduced wintertime street sanding and voluntary emissions reductions at area power plants.

In the future, visibility should continue to improve as stricter emissions standards for gasoline and diesel motor vehicles are put in place.

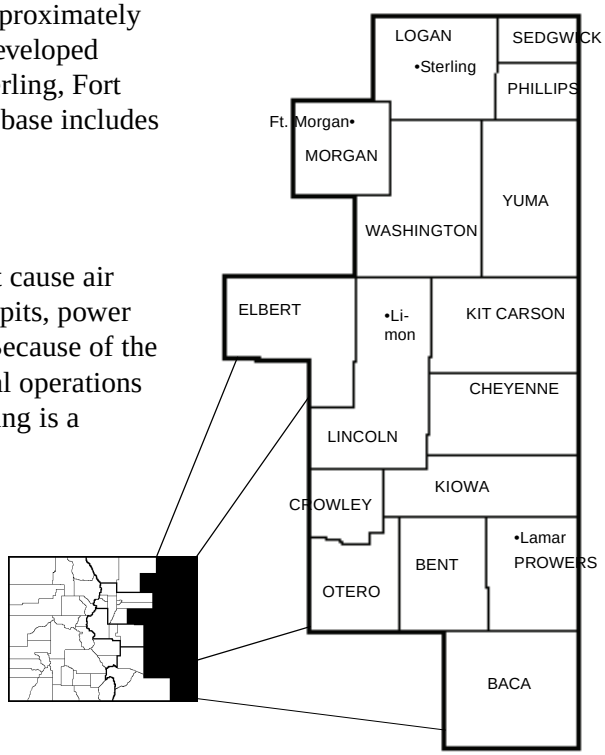
Five major studies of Denver area visibility have occurred since the 1970s, with the most recent study done by Colorado State University from 1996-98 (See www.nfraqs.colostate.edu for more information).

The studies have shown that the Denver "brown cloud" is caused by local, not regional emissions, and that chemical reactions in the atmosphere turn sulfates, nitrates and organic carbon into particles that cause the brown cloud. Denver's meteorology and topography contribute to the brown cloud when pollutants are trapped in the Denver basin by air inversions. The largest single source of the brown cloud is motor vehicle use.

The Colorado Air Quality Control Commission and the Air Pollution Control Division will continue to analyze and monitor visibility to better understand what we can do to improve the visible aspect of air quality.

Eastern High Plains Region

The Eastern High Plains Region encompasses the counties on the plains of eastern Colorado. The area's population is approximately 138,447 (2000 census). Its major urban centers have developed around farming, ranching and trade centers such as Sterling, Fort Morgan, Limon, La Junta and Lamar. The agricultural base includes both irrigated and dryland farming.



Air Pollution Sources

There are a number of industries in this region that cause air pollution. These include agricultural processes, gravel pits, power plants and natural gas pipeline compression stations. Because of the region's semiarid nature, fugitive dust from agricultural operations dominates air pollution in the region. Residential burning is a minor contributor to air pollution in the region.

Air Pollution Control Measures

In this region, the control of air pollution is accomplished through the cooperative efforts of state and local health departments in enforcing state emission regulations on stationary sources. In addition, the City of Lamar has taken steps to maintain and improve its air quality.

City of Lamar

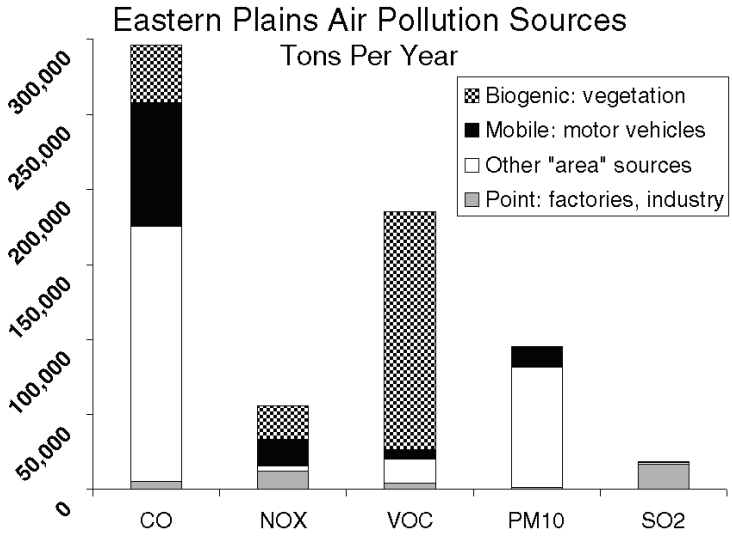
The City of Lamar's role in air quality has been to continue addressing dust abeyance at its source, continue planting trees and grass, and implementing programs to encourage cleaner yards and streets.

Lamar was approved in 2001 by the Colorado Air Quality Control Commission as an attainment area for the federal particulate matter standard. The area has not violated the standard since 1992.

Additionally, the City of Lamar has joined efforts with the Air Pollution Control Division and Prowers County to develop a community survey that will gauge public perception of air quality and the public's willingness to utilize public funds to improve local air quality.

Prowers County also works closely with the City of Lamar to ensure that developments within close proximity of the city do not impact air quality.

-- Revised Prior to 2008



CO: Carbon Monoxide
NOx: Oxides of Nitrogen
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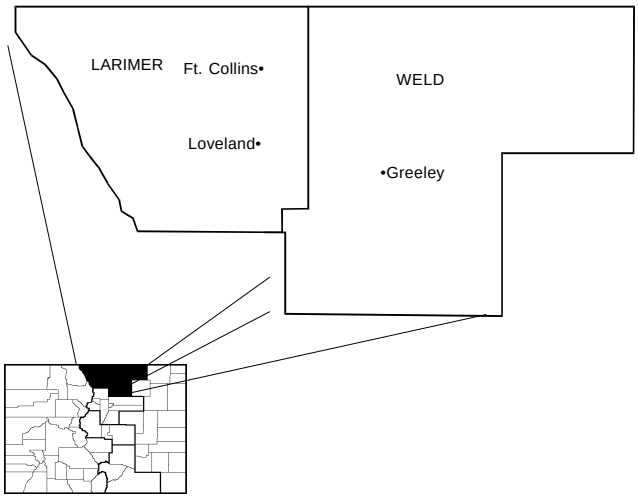
SO2: Sulfur Dioxide

North Front Range Region

The North Front Range Region is comprised of Larimer and Weld counties. The population of these two counties is approximately 500,732 (State Demography Office, 2005). The two major urban areas are Fort Collins in Larimer County and Greeley in Weld County. The city of Loveland also is included in this region. Larimer County has irrigated farmland in its eastern half and mountains in its western half. Weld County is predominantly grassland and irrigated farmland.

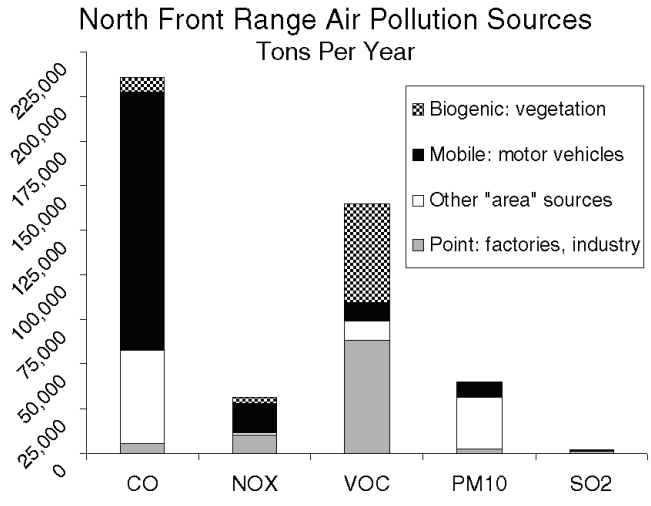


Air Pollution Sources

The main pollutant of concern in the North Front Range is ground-level ozone. Precursors to ground-level ozone are emissions containing volatile organic hydrocarbons (VOCs) and nitrogen oxides (NOX). Major contributors of these emissions are oil and gas field production facilities and mobile sources (on and off road motor vehicles and equipment). Emission inventories compiled in the North Front Range Region also indicate pollution influences from industry, manufacturing, power plants, cement plants, and mining.

Residential burning, dust from unpaved roads and agricultural operations also contribute to air pollution in the Fort Collins and Greeley areas.

The North Front Range continues to grow and add new businesses. Some of these businesses are minor air pollution sources that require emission permits from the Air Pollution Control Division. The Fort Collins and Greeley areas have been designated as attainment/maintenance areas for carbon monoxide. Emissions from this pollutant have been reduced dramatically.



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Air Pollution Control Measures

In Fort Collins and Greeley a number of strategies are being implemented to control air pollution. The Larimer County and Weld County health departments and the cities of Fort Collins and Greeley all have worked toward implementing these strategies.

The North Front Range Transportation and Air Quality Planning Council is the air quality planning agency in the Fort Collins and Greeley areas and partners with other agencies to determine strategies to reduce air pollution.

City of Fort Collins

www.fcgov.com/airquality/

The Natural Resources Department takes a lead role in addressing air pollution problems in Fort Collins in accordance with the city's Air Quality Plan. The plan focuses on air pollution caused by motor vehicles, commerce and industry, residential burning and indoor air pollutants. The Air Quality Plan is implemented primarily through education and outreach. Data collection and monitoring help assess current programs and provide guidance for periodic reviews and updates. The city strives to demonstrate clean air practices in its own operations. A regulatory approach is employed when necessary.

The city has taken actions to reduce traffic growth through alternative transportation choices and land use planning to reduce dependency on automobiles. The city's education and outreach efforts provide information about the connection between air quality and automobile use.

The city has an action plan to reduce greenhouse gas emissions from Fort Collins. The plan identifies strategies to lower greenhouse gas emissions to 30 percent of the predicted 2010 levels, and save money for the city, its citizens and businesses. In addition, the city is working with 29 area businesses that have committed to reduce greenhouse gas emissions through a local voluntary program called Climate Wise.

The city's air quality education and outreach efforts target diverse audiences through various methods. Students participate in activities such as the DriveLess Contest. The contest is an incentive program for high school students and school staff to use alternative modes of transportation. Also, the Air Care Trunk is available for checkout by teachers. The kit contains materials and lesson plans to teach elementary students about clean air. Regular articles, advertisements, and participation in public events keep air quality messages in public view.

-- Revised Prior to 2008

Larimer County Department of Health and Environment

www.larimer.org/

The Air Quality Program for the Larimer County Department of Health and Environment includes ambient air quality monitoring, source inspection, enforcement actions, planning, educational presentations, and public information and outreach efforts.

Staff work as agents for the Colorado Air Pollution Control Division. Cooperation with other local agencies including the North Front Range Transportation and Air Quality Planning Council occurs regularly. A county air quality control review is conducted for all new land development.

Larimer County personnel perform inspections and enforcement activities for minor stationary sources and chlorofluorocarbons, and conduct ongoing ambient air quality monitoring for criteria pollutants. Air quality complaints received from the public are investigated. Larimer County operates the PM2.5 and PM10 particle samplers in the Ft. Collins area along with carbon monoxide and ozone monitors.

-- Revised Prior to 2008

North Front Range Transportation and Air Quality Planning Council

www.nfrmpo.org/

The North Front Range Transportation and Air Quality Planning Council was established in 1988 as the metropolitan planning organization for the Greeley and Fort Collins areas. In 1993 the council was designated by the governor as the lead air quality planning organization for both of these areas. The council is responsible for the development and implementation of the Fort Collins and Greeley elements of the state implementation plan (SIP) for attainment of air quality standards and for other transportation related air quality planning projects in the North Front Range region.

Voting membership on the Council includes Larimer and Weld counties, Berthoud, Eaton, Evans, Fort Collins, Garden City, Greeley, Johnstown, LaSalle, Loveland, Milliken, Severance, Timnath, Windsor, the Colorado Air Quality Control Commission, and the Colorado Transportation Commission.

-- Revised Prior to 2008

City of Greeley

www.greeleygov.com

The City of Greeley employs a number of strategies to address air quality within its urban growth area. The Air Quality and Natural Resources Commission, a seven-member citizen advisory board appointed by City Council, provides quasi-judicial oversight of the city's ordinances related to outdoor odors that emanate from sources within the city limits. This program has reduced odor complaints from over 600 per year to less than 20 per year since its inception in 1996.

The commission also reviews city programs related to air and natural resources and makes recommendations to staff and city council for existing and new programs related to these resources. Staff from the Natural Resources Division of Community Development participates in local and regional strategies to address air pollution issues related to ozone. Staff also reviews development proposals for potential impacts to air quality.

-- Revised 2008

Weld County Department of Public Health and Environment

www.co.weld.co.us/

The Environmental Health Services of the Weld County Department of Public Health and Environment implements many of the air quality programs for the Colorado Air Pollution Control Division. The Weld County programs listed here help protect ambient air quality and keep Weld County in attainment of state and federal air quality standards.

Services

Inspections of air pollution sources are conducted.

Weld County residents' complaints about air quality are investigated and resolved.

Residents' requests for open burning permits are evaluated and either issued or denied. The program is discouraging burning while encouraging composting.

Colorado Air Pollution Control Division monitoring equipment for particulate matter, carbon monoxide and ozone in Greeley and Platteville are maintained and operated jointly by staff members of Weld County Environmental Health Services.

Assistance is provided to small businesses that need help in complying with air regulations.

Environmental Health Services works with communities within the county and recommends air quality-related land use provisions which may then be adopted by county and local governments.

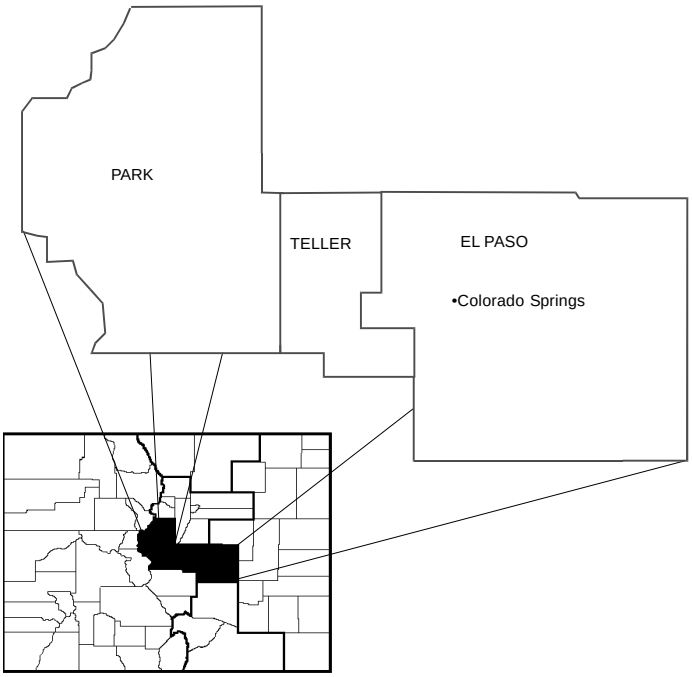
Greeley and Weld County participate in a Clean Cities program that promotes alternative modes of transportation and the use of cleaner burning fuels.

Environmental Health Services conducts investigations of asbestos and chlorinated hydrocarbon issues.

-- Revised Prior to 2008

Pikes Peak Region

The Pikes Peak Region includes El Paso, Teller and Park counties. The area has a population of approximately 552,007 (2000 census). The Colorado Springs-metro area is one of the more rapidly growing areas in the state. Eastern El Paso County is rural prairie, while the western part, along with Park and Teller counties, is mountainous.

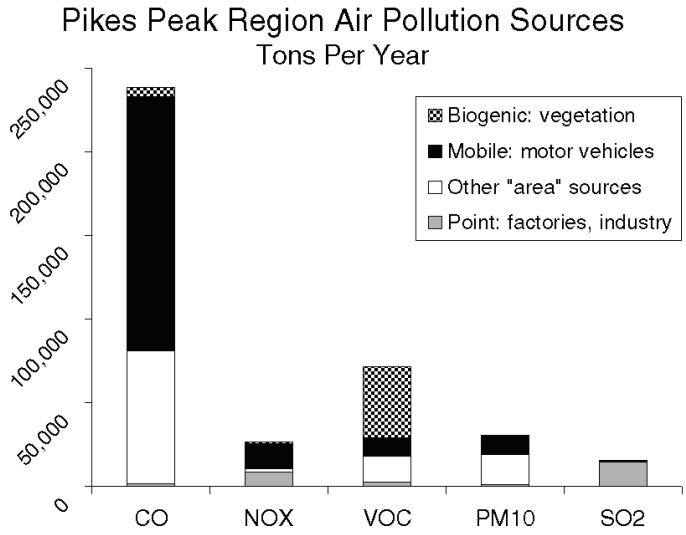


Air Pollution Sources

As in other urbanized areas in Colorado, pollutants in the Pikes Peak Region originate primarily from stationary and mobile sources. Major sources in the region include power plants, ready-mix concrete plants, electronics manufacturing facilities, quarries and extensive military operations. Other sources include motor vehicle emissions, residential burning, street sanding operations, PM10 emissions from unpaved roads and construction activities.

Air Pollution Control Measures

In this region, the management of air pollution is led by the Pikes Peak Area Council of Governments. In addition, the El Paso County Department of Health and Environment provides air quality monitoring, and enforcement and public education activities in accordance with the Colorado Air Pollution Prevention and Control Act.



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Pikes Peak Area Council of Governments

www.ppacg.org

The Pikes Peak Area Council of Governments (PPACG) is designated as the metropolitan planning organization and lead air quality planning agency for the Pikes Peak Region. The region primarily covers the Colorado Springs urbanized area.

PPACG reviews current and emerging air quality issues, develops plans to improve air quality, and is responsible for development and implementation of the carbon monoxide maintenance plan to ensure the region meets federal carbon monoxide standards. In May 2008 an Air Quality Monitoring and Trends Report was developed which provides an overview of the spatial and temporal trends for the six EPA criteria pollutants.

The region currently meets the new ozone standard of 0.075 ppm (based on 2005 through 2007 data) and voluntary programs are being implemented to reduce ozone concentrations. A link to these voluntary programs is provided on the website along with the Ozone White Paper which provides background information on ozone issues in the Colorado Springs region.

All transportation related projects are reviewed to demonstrate compliance with air quality standards and their ability to manage congestion. The 2035 Long Range Transportation Plan and 2008 - 2013 Transportation Improvement Program were approved by the Board in February 2008.

PPACG is governed by a board of directors composed of elected officials from El Paso, Teller and Park counties; cities of Colorado Springs, Fountain, Monument, Manitou Springs, Palmer Lake, Woodland Park, Alma, Cripple Creek, Victor, Calhan and Green Mountain Falls; the Colorado Air Quality Control Commission and the Colorado Transportation Commission.

-- Revised 2008

El Paso County Air Quality Section

www.elpasocountyhealth.org

The Air Quality Section of the El Paso County Department of Health and Environment has the responsibility for enforcement, monitoring and educational aspects of the Colorado Air Pollution Prevention and Control Act.

Inspections are conducted on minor sources of air pollution such as auto body repair shops, earth-moving activities and chlorofluorocarbon sources.

Complaint investigations are conducted on asbestos, odors, fugitive dust and general air quality sources.

The department also is responsible for the operation and maintenance of the air-monitoring network in El Paso County in cooperation with the Air Pollution Control Division. The department collects air quality data from the monitoring sites in accordance with the U.S. Environmental Protection Agency requirements.

An air quality index report is prepared by staff and reported to the public twice a day via a website and a telephone hotline.

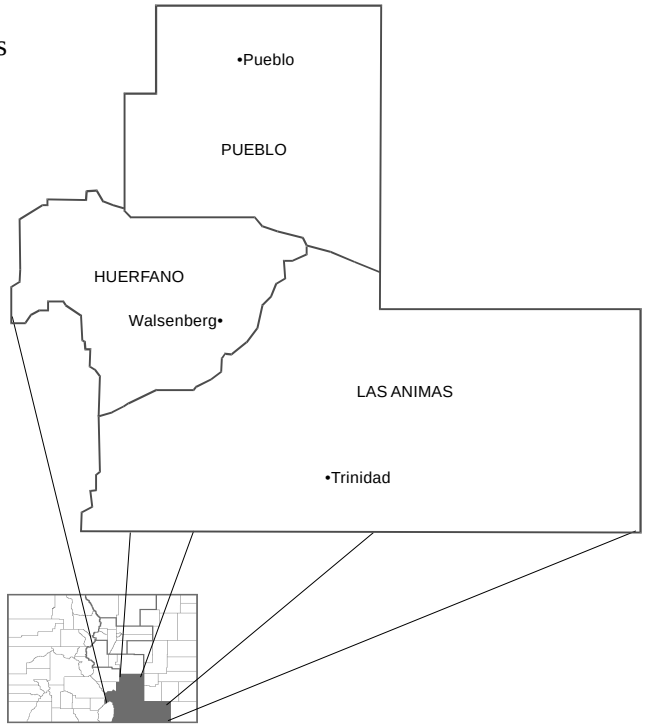
Presentations about local and state air quality issues are given to civic groups and schools in El Paso County.

The department also is responsible for enforcement of a local air quality regulation which covers emissions from fugitive dust sources such as earth moving, demolition, sandblasting and open burning.

-- Revised Prior to 2008

South Central Region

The South Central Region is comprised of Pueblo, Huerfano and Las Animas counties. Its population is approximately 164,541 (2000 census). Major urban centers include Pueblo, Trinidad and Walsenburg. The region has rolling semiarid plains to the east and is mountainous to the west.



Air Pollution Sources

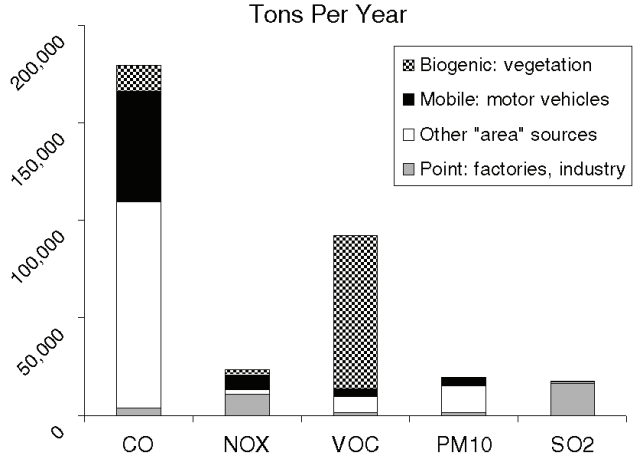
Pollution in this area comes from various sources, including fugitive dust (area contribution), mobile sources and stationary sources. The criteria pollutants including carbon monoxide, nitrogen oxide, sulfur dioxide and PM10, and volatile organic compounds have been modeled for the region. Modeling shows that the two significant contributors to air pollution are mobile and area sources. Point sources are a minor contributor. Examples of mobile sources are motor vehicle emissions. Area sources are dust from unpaved roads and open burning. Point sources include facilities such as power plants, concrete batch plants, and sand and gravel mining and processing operations.

Air Pollution Control Measures

The Pueblo City-County Health Department, under a contract with the Colorado Air Pollution Control Division, conducts inspections of more than 20 stationary sources annually. This contract also provides for chlorofluorocarbon (CFC) and asbestos field inspections. CFC inspections include air conditioning and appliance service and repair shops. Asbestos inspections primarily are in response to citizen complaints. Monitoring occurs for particulate matter in two size ranges: PM10 and PM2.5.

Historically and currently, all of the South Central Region is in compliance with the National Ambient Air Quality Standards (NAAQS) through past and current efforts in inspection, monitoring, enforcement and education.

South Central Region Air Pollution Sources
Tons Per Year



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Pueblo City-County Health Department

www.co.pueblo.co.us/pcchd

The community in Pueblo continues to show an interest in a variety of air quality related issues. Public awareness and concern has been heightened by a number of events, including the construction of a large cement manufacturing plant, a major expansion of the Comanche Power Plant in 2004, ongoing plans to destroy the mustard agent stored at the Pueblo Chemical Depot, and two major asbestos spills in 2007.

A 2006 mercury warning posted at Brush Hollow Lake in a nearby county also increased public concern surrounding mercury and mercury emissions from local industries. Rocky Mountain Steel Mills, a local industry which contributes mercury air emissions, has been participating in a program to receive scrap metal from facilities that participate in a mercury removal program. In this program, automobile dismantlers remove the mercury-containing light switches from scrap vehicles prior to the vehicles being flattened and then shredded at scrap recycling facilities.

For the past several years, the local air quality program also has focused on dealing with fugitive dust originating from land development and construction activities by adjusting the municipal code. This ordinance modification allowed for more effective dust control, especially during drought and gusty winds.

In the city, land developers whose activities involve from one acre to less than 25 acres are required to submit an application with a dust control plan and are issued a permit that requires them to adhere to the dust control plan. Construction activities typically occur on areas less than one acre, which require an agreement that the developer control dust.

The Pueblo City-County Health Department is currently constructing a new building that will be Leadership in Energy and Environmental Design (LEED) certified. The building will include LED task lighting, and low-toxics emissions from paint, carpet and wood. The building will also include low water consumption fixtures. Twenty percent of the building materials will originate within a 500 radius of Pueblo.

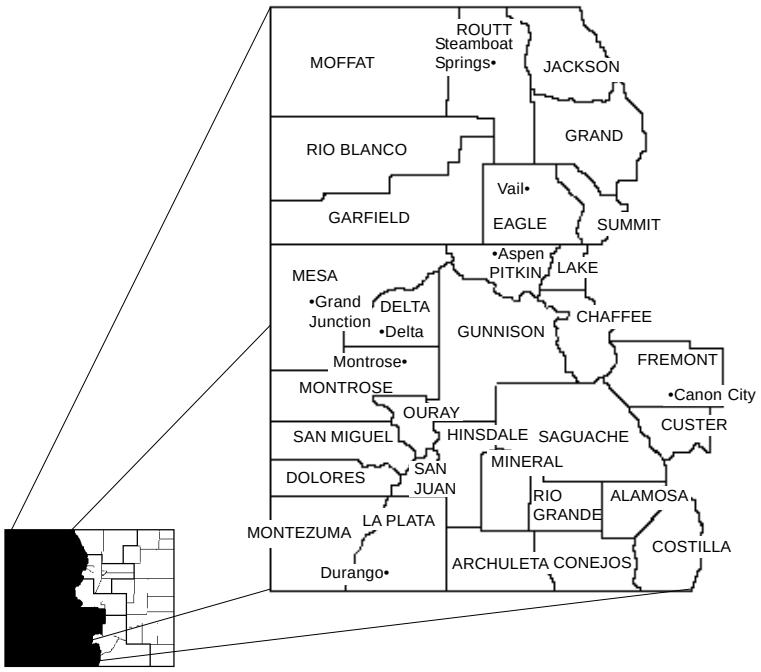
The new building will improve air and water quality, and conserve natural resources while reducing long-term operating costs. The results of energy modeling show the building will avoid emissions of 376 tons of carbon dioxide per year.

-- *Revised 2008*

Western Slope Region

The Western Slope Region for air quality planning is composed of the counties lying west of the Continental Divide, and several counties just east of the Divide. The population of counties west of the Divide is projected to be 585,313 by 2010, according to the State Demographer's Office, a 25 percent increase from 2000.

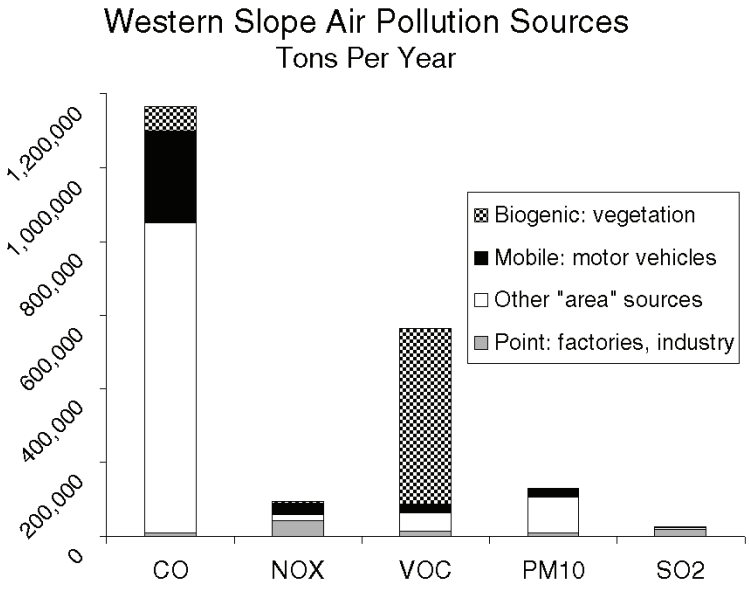
Mountains, mesas, plateaus and broad valleys are the predominant features in much of this region.



Air Pollution Sources

Air quality concerns in this region primarily are from the impacts of a recent surge in energy development. In the 1990s, air quality concerns primarily were related to woodstoves, unpaved roads and street sanding. These "area" sources were addressed in many Western Slope communities and are no longer as significant as the impacts from energy development, including direct emissions, support service impacts and associated growth.

Controlled and uncontrolled burn are a significant source of air pollution in this region.



Air Pollution Control Measures

Many Western Slope communitie have taken aggressive action to control residential burning emissions. The municipalities of Aspen, Crested Butte, Steamboat Springs, Telluride and Vail, and Pitkin, San Miguel, Summit, Mesa and Eagle counties have adopted either mandatory or voluntary control measures to reduce residential burning pollution during winter seasons. Increased awareness of visibility impacts and fine particle levels spurred the installation of new air monitoring equipment to gauge those impacts. The region also has a number of local agencies that conduct air quality control programs.

CO: Carbon Monoxide
NOx: Oxides of Nitrogen
VOC: Volatile Organic Compounds
PM10: Particles less than 10 microns in diameter
SO2: Sulfur Dioxide

City of Aspen
Environmental Health Department
www.aspenpitkin.com

The City of Aspen's Environmental Health Department helps local businesses and citizens to reduce air pollution and improve their pollution prevention efforts, and enforces idling vehicle, smoking vehicle, and other environmental laws. The department conducts a number of air quality improvement programs:

With 83 percent of Aspen's PM10 on high pollution days coming from traffic, the department focuses on trip reduction measures. Incentives and disincentives include a large, free bus system, a bus-only lane exiting town during evening rush hour, a bus lane now being constructed coming into and out of town, and parking fees to provide a financial incentive to carpool or take the bus.

Aspen's new sustainability effort, the ZGreen Program (named after Aspen's highly coveted original ZG license plates) includes a business certification program. Certification requires tracking energy use, and reducing air pollution, solid waste, and greenhouse gas emissions. ZGreen also has a citizen program in which citizens commit to five measures each year to reduce their environmental impact. The final component is a ZGreen event program. Several city events have been certified as ZGreen events by composting food waste, using biodegradable or recycled content products, and reducing greenhouse gas emissions. Next year, all of the city's permitted special events are expected to be ZGreen events.

Aspen's greenhouse gas emission reduction program, dubbed the "Canary Initiative," has several ongoing efforts. The emissions inventory is being updated, and voters approved a new micro-hydro plant to bring Aspen Municipal electric's renewable energy percentage to 83 percent.

The city is subsidizing home energy ratings, providing increased rebates for efficient appliances, and installing solar panels on its water plant and parks trash compactors.

The city manager has directed each department to reduce greenhouse gas emissions by one percent per year for the first four years, and two percent per year beginning next year, despite increased staffing and annexations. Employees receive significant financial bonuses if their department, and the city as a whole, meets these goals.

To meet the goals, the police department switched to hybrid electric vehicles, and several buildings have had extensive efficiency upgrades.

Unlike most landfills, Pitkin County's largest volume of solid waste is construction and deconstruction materials. To extend the life of the landfill, thereby preventing increased air pollution from long hauls to other landfills, the department is working to require additional recycling, diversion, and volume reduction of construction materials.

This winter, US Forest Service monitoring on top of Aspen Mountain showed the highest ozone level yet recorded on the Western Slope (high enough to exceed the new standard if confirmed). Aspen has requested a monitor to determine ozone levels near town and will then need to determine how much of the sources are upwind oil and gas development, local and regional traffic, and natural sources.

-- Revised 2008

Cañon City
www.canoncity.org

In March 1988, Cañon City officially adopted a series of local measures to reduce particulate matter produced from street sanding. Street sand was the city's main source of particulate pollution. The program of street sweeping on a regular basis began in the winter of 1987-1988 and has continued since.

Cañon City has shown attainment of the National Ambient Air Quality Standards for particulate pollution. Cañon City has been awarded a Congestion Mitigation/Air Quality Program grant for the past five years. These funds have been used each year for the paving of unpaved streets. Since 1999, these grant funds have been used to pave almost three miles of gravel streets.

In addition, Cañon City annually treats more than three miles of gravel streets with magnesium chloride to further reduce fugitive dust.

-- Revised Prior to 2008

Delta County

www.deltacounty.com/

The Delta County Environmental Health Division acts in a supportive role to the Colorado Air Pollution Control Division in the following areas:

• A community-based task force for air quality discusses air quality issues and makes plans to improve air quality in Delta County.

• The Delta County Health Department offers rebates for old woodburning stoves that are replaced with clean burning units.

• The Environmental Health Division operates a PM 2.5 sampler and a PM10 sampler located in Delta.

• The Environmental Health Division works with the Mesa County Health Department to issue "No-Burn Advisories" during the winter heating season.

• The Environmental Health Division enforces the Delta County Open Burning Regulations.

• Stationary source pollution complaints for fugitive dust control, odors and stack emissions are investigated and referred to the Colorado Air Pollution Control Division.

-- Revised Prior to 2008

Eagle County

www.eaglecounty.us/envHealth/

Eagle County considers clean air one of its most valuable assets. By being proactive, the county remains in attainment of ambient air quality standards as established by the Environmental Protection Agency (EPA).

Wood Burning

Eagle County's Board of County Commissioners adopted a regulation to control pollution caused by wood smoke in 1992 virtually eliminating conventional, open-hearth fireplaces in new construction. The regulation limits the number of wood burning devices per residential building while requiring cleaner burning, more energy efficient technologies. In addition to these requirements, partnerships between Eagle County and its municipalities, especially Vail, Avon, Eagle and Basalt continue to promote change-out programs and provide public information on how to burn a clean, hot fire.

Open Burning

Open burning permits are coordinated by our new Wildfire Mitigation Specialist in conjunction with local fire districts. Permits are issued for virtually every open burn, even agricultural irrigation ditch burning, which enables better management of air quality impacts.

Fugitive Dust

Eagle County has many sources of fugitive dust from industrial aggregate mining to large development projects. The Environmental Health Department is directly involved in local land use approval process to assure locally-enforceable fugitive dust abatement plans are implemented for site disturbance.

The road and bridge department has an ongoing road surfacing program which includes either paving or treatment with magnesium chloride to control dust emissions on more than 200 miles of roads annually.

Transportation

ECO Transit contributes to air quality by providing public transportation opportunities to commuters as well as getting visitors from the Eagle County Regional Airport to their resort destinations.

Eagle County continues to pursue cleaner burning fuels and vehicles for the bus system and motor pool fleet.

Other Efforts

Eagle County created and ad-hoc Air Quality Forum whose membership consists of representatives of the gravel and gypsum mining industries as well as local governments.

The group is developing mutually agreed upon industry standards of operation that raise the bar in Eagle County for cleaner air. The Air Quality Forum is broadening its scope by researching Best

Available Demonstrated Technologies for other industries, and lobbying local governments to take regulatory action aimed at controlling emissions.

Other actions taken by Eagle County under the ECO Green Initiative program reduce greenhouse gas emissions. These efforts include incorporating 20 Toyota Prius hybrid vehicles in the motor pool fleet; constructing a photovoltaic farm at the airport; implementing an ECO Build program; making changes to land use regulations to encourage the use of clean, renewable resources; and implementing the recommendations of an energy audit conducted on major facilities.

Indoor Air Quality

Eagle County has one of the strictest smoking ordinances in the country. The ordinance eliminates second-hand smoke exposure to the general public at workplaces, restaurants and bars, etc. The ordinance also applies to outdoor public events, ski lift lines, ski race spectator areas, special events and the county fair and rodeo.

-- Revised 2008

Garfield County Public Health

www.garfield-county.com

Garfield County completed a two-year ambient air quality study in 2007 designed to gather baseline air quality data and to address local concerns about air quality degradation related to continued expansion of the natural gas industry and community growth. The study report and several supporting documents are available at www.garfield-county.com/index.aspx?page=1117 .

Although no violations of the National Ambient Air Quality Standards were observed, a subsequent screening level risk assessment by the CDPHE Disease Control and Environmental Epidemiology Division and an Agency for Toxic Substances and Disease Registry health consultation suggest that the available data somewhat indicate a potential for benzene impacts across the oil and gas areas, based on the VOC monitoring results at an oil and gas site and at grab sampling locations. These reports are available on line at www.garfield-county.com/Index.aspx?page=1127 .

The Saccomanno Research Institute of St. Mary's Hospital in Grand Junction concluded a Community Health Risk Assessment in June 2008. This study group integrated air quality monitoring data and emission rates and modeled potential environmental exposures to gain a better understanding of human health risks from oil and gas emission sources. All reports and presentations are available at www.garfield-county.com/Index.aspx?page=1127 .

The results of these studies and a strong collaboration with the Air Pollution Control Division have resulted in several enhancements to the Garfield County Air Monitoring Program for 2008-2009.

Garfield County continues to fund air toxics monitoring. The county conducts air sampling for toxics in the most impacted urban areas and in two oil and gas development and production areas.

CDPHE continues to support PM10 monitoring in Parachute and Rifle and has provided funding to Garfield County for installation of continuous ozone, PM10 and PM2.5 monitoring equipment in Rifle. The Rifle site also includes enhanced meteorological and visibility monitoring.

Additionally, Garfield County Public Health received an EPA Regional Geographic Initiatives Grant in 2007, and is partnering with several oil and gas companies to conduct targeted air monitoring of active drilling and well completion sites. The goal of this work is to better characterize the emissions generated from these activities and to better understand exposure risks.

The Garfield County Air Quality Technical Work Group, assembled by the Garfield County Public Health Department in early 2006, examines air quality issues in the county. The group is made up of individuals from federal, state and local government, the oil and gas industry, and the private consulting sector. It meets regularly to discuss air monitoring data, monitoring systems, emission inventories, and human health risks.

Environmental health staff also works closely with local land use agencies, the CDPHE Air Pollution Control Division and the Colorado Oil and Gas Conservation Commission on evaluating land use proposals and investigating a variety of local air quality complaints.

During late 2007 and early 2008, Garfield

County Public Health partnered with the Garfield County Energy Advisory Board and Colorado Mountain College to provide community information and education about air quality. The Smart Citizen Series on Air Quality enlightened community members on subjects ranging from general air quality to local monitoring and health risks. A community forum during one meeting allowed citizens to raise issues of concern to local officials. These presentations are available at http://www.garfield-county.com/Index.aspx?page=1119 .

Garfield County Public Health also continues to partner with local fire authorities to develop and distribute educational materials to county residents about trash burning, agricultural open burning alternatives and smoke management best practices.

-- Revised 2008

Mesa County

www.health.mesacounty.us/environment

The Mesa County Health Department - Environmental Health Division has contracted with the Colorado Air Pollution Control Division for nearly 30 years to provide a number of air quality services to the community.

These services currently include inspecting stationary sources, issuing state open burning permits, providing technical assistance to sources for obtaining and submitting air pollution emission notices and permit applications, and monitoring ambient air for the Grand Valley airshed.

Air Monitoring

Air monitoring includes periodic and hourly sampling of coarse (PM10) and fine (PM2.5) particulates. A speciation sampler helps identify the sources of fine particulates as part of a national trends assessment. Particulate sampling occurs in downtown Grand Junction and on the south edge of Clifton just east of Grand Junction.

A carbon monoxide analyzer is located in downtown Grand Junction, and an ozone analyzer is located at the Palisade Water Treatment Plant on Rapid Creek Road. The downtown monitoring site also supports a National Air Toxics Trend Station site, one of only seven such sites in the country.

Air toxics sampling includes volatile and semi-volatile organic compounds, carbonyls, and toxic metals.

Other Services

In addition to contract services, Mesa County Health Department also provides a number of community-based programs not funded by the state air division.

These include issuing local open burning permits and providing oversight for five local fire protection districts in coordinating permits, implementing burn and no-burn seasons, responding to complaints and providing enforcement.

Fugitive dust and odor issues not related to state permitted sources are also addressed by the department.

A recently formed indoor air quality program provides outreach primarily for radon, mold and lead problems in households and apartments.

During the winter months, the Western Slope Air Watch program provides daily air quality advisories to Mesa, Delta and Montrose Counties for the use of woodstoves and fireplaces. During the growing season from March through October, an airborne allergen reporting program provides twice weekly updates on pollen and spore levels.

All advisories and reports are posted to the health department's web site.

The Mesa County Air Quality Planning Committee (MCAQPC) serves as an advisory committee on air quality planning issues to the Mesa County Board of Health. This 13-member committee has met quarterly for 15 years and focused on issues such as wood stoves, road dust and street sweeping guidelines, air shed boundaries, open burning, oil and gas development, and industrial odor emissions. The air program director for the county health department serves as the technical secretary for this committee.

-- Revised 2008

Routt County

www.co.routt.co.us/

The Routt County Department of Environmental Health maintains an air monitoring program on behalf of the Colorado Air Pollution Control Division for the Steamboat Springs air shed. The department manages five PM10 monitors (one real-time monitor) and one PM 2.5 monitor.

The Steamboat Springs airshed has been in PM10 compliance since 1996. An air quality attainment plan has been developed and approved by the Colorado Air Quality Control Commission. Required approvals by the legislature, the governor's office, and the U.S. Environmental Protection Agency were completed and Steamboat Springs was designated an attainment area in 2004.

-- Revised Prior to 2008

San Miguel County

www.sanmiguelcounty.org/environm.htm

The San Miguel County Planning and Environmental Health Departments administer regulations aimed at protecting county air quality.

The county has banned installation of solid-fuel burning devices in a 27-square mile area around Telluride to limit particle emissions. Paving is required for all new streets in this area to prevent pollution from vehicle re-entrained dust. The county also has approved plans to pave existing roads as necessary to protect air quality and has installed permanent traffic counters at its most active highway segments to aid in correlating traffic volumes with pollution levels.

A computer model ("Wyndvalley 3") is being developed to help the county understand pollutant dispersion in the Telluride airshed and improve prediction of future pollution levels. A Graseby Beta Gauge, which provides real-time air quality monitoring, has proven beneficial in charting daily patterns of accumulation and dispersion of particles.

Improved street sweeping, sanding and chemical de-icing practices by the town of Telluride, and a free gondola system linking Telluride and Mountain Village, have helped reduce particle emissions to the lowest levels measured in the region since monitoring began in 1973.

Telluride was redesignated as an attainment area for the federal PM10 standards in 2001.

-- Revised Prior to 2008

2007 Air Pollution Levels

Central Front Range: counties of Adams, Arapahoe, Boulder, Broomfield, Clear Creek, Denver, Douglas, Gilpin, Jefferson.

Pollutant	Monitoring Site with Highest Level *	Percent of Standard ** (See appendix for standards)
Carbon Monoxide	2105 Broadway, Denver	5.9 ppm -- 17% of 1-hour standard
	2105 Broadway, Denver	2.8 ppm -- 29% of 8-hour standard
Ozone	16600 W. Colorado #128	.108 ppm -- 86% of 1-hour standard
	16600 W. Colorado #128	.085 ppm -- 100% of 8-hour standard
Nitrogen Dioxide	2105 Broadway, Denver	.027 ppm -- 50% of annual average standard
Sulfur Dioxide	78th Ave. & Steele St., Denver	.121 ppm -- 22% of 3-hour standard
	78th Ave. & Steele St., Denver	.018 ppm -- 12% of 24-hour standard
	2105 Broadway, Denver	.003 ppm -- 9% of annual standard
PM10	7101 Birch St., Commerce City	118 ug/m^3 -- 76% of 24-hour standard
	7101 Birch St., Commerce City	34.3 ug/m^3 -- 62% of annual average standard
PM2.5	7101 Birch St., Commerce City	29.2 ug/m^3 -- 82% of 24-hour standard
	7101 Birch St., Commerce City	10.72 ug/m^3 -- 69% of annual average standard
Lead	678 S. Jason St., Denver	.01 ug/m^3 -- 1% of calendar quarter standard

Eastern High Plains: counties of Baca, Bent, Cheyenne, Crowley, Elbert, Kiowa, Kit Carson, Lincoln, Logan, Morgan, Otero, Phillips, Prowers, Sedgwick, Washington, Yuma.

Pollutant	Monitoring Site with Highest Level *	Percent of Standard ** (See appendix for standards)
PM10	Lamar Power Plant, 100 N. 2nd Ave. Lamar Power Plant, 100 N. 2nd Ave.	93 ug/m^3 -- 60% of 24-hour standard 25.6 ug/m^3 -- 47% of annual average standard
PM2.5	Vicinity of Roads 5 and 98, Elbert County Vicinity of Roads 5 and 98, Elbert County	11.8 ug/m^3 -- 33% of 24-hour standard 4.8 ug/m^3 -- 31% of annual average standard

Northern Front Range: counties of Larimer, Weld.

Pollutant	Monitoring Site with Highest Level *	Percent of Standard ** (See appendix for standards)
Carbon Monoxide	905 10th Ave., Greeley 905 10th Ave., Greeley & 708 S. Mason, Fort Collins	3.9 ppm -- 11% of 1-hour standard 2.4 ppm -- 25% of 8-hour standard
Ozone	3416 LaPorte Ave. Ave., Fort Collins 708 S. Mason, Fort Collins	.107 ppm -- 86% of 1-hour standard .074 ppm -- 87% of 8-hour standard
PM10	1516 Hospital Rd., Greeley 1516 Hospital Rd., Greeley	89 ug/m^3 -- 57% of 24-hour standard 22.4 ug/m^3 -- 41% of annual average standard
PM2.5	1516 Hospital Rd., Greeley 1004 Main St., Platteville	24.0 ug/m^3 -- 68% of 24-hour standard 10.3 ug/m^3 -- 66% of annual average standard

Pikes Peak Region: counties of El Paso, Park, Teller.

Pollutant	Monitoring Site with Highest Level *	Percent of Standard ** (See appendix for standards)
Carbon Monoxide	690 W. Hwy. 24, Colorado Springs	4.0 ppm -- 11% of 1-hour standard
	690 W. Hwy. 24, Colorado Springs	2.4 ppm -- 25% of 8-hour standard
Ozone	101 Bank's Place, Manitou Springs	.084 ppm -- 67% of 1-hour standard
	101 Bank's Place, Manitou Springs	.074 ppm -- 86% of 8-hour standard
PM10	101 W. Costilla, Colorado Springs	66 ug/m^3 -- 43% of 24-hour standard
	101 W. Costilla, Colorado Springs	23 ug/m^3 -- 42% of annual average standard
PM2.5	101 W. Costilla, Colorado Springs	15.8 ug/m^3 -- 45% of 24-hour standard
	101 W. Costilla, Colorado Springs	7.3 ug/m^3 -- 47% of annual average standard

South Central: counties of Huerfano, Las Animas, Pueblo.

Pollutant	Monitoring Site with Highest Level *	Percent of Standard ** (See appendix for standards)
PM10	211 D St., Pueblo	72 ug/m^3 -- 46% of 24-hour standard
	211 D St., Pueblo	23.8 ug/m^3 -- 43% of annual average standard
PM2.5	211 D St., Pueblo	15.3 ug/m^3 -- 43% of 24-hour standard
	211 D St., Pueblo	7.2 ug/m^3 -- 46% of annual average standard

Western Slope: counties of Alamosa, Archuleta, Chaffee, Conejos, Costilla, Custer, Delta, Dolores, Eagle, Fremont, Garfield, Grand, Gunnison, Hinsdale, Jackson, Lake, La Plata, Mesa, Mineral, Moffat, Montezuma, Montrose, Ouray, Pitkin, Rio Blanco, Rio Grande, Routt, Saguache, Summit, San Juan, San Miguel.

Pollutant	Monitoring Site with Highest Level*	Percent of Standard ** (See appendix for standards)
Carbon Monoxide	Stocker Stadium, Grand Junction	2.8 ppm -- 8% of 1-hour standard
	Stocker Stadium, Grand Junction	1.8 ppm -- 19% of 8-hour standard
PM10	19 Emmons Loop, Mt. Crested Butte Colorado 135 & White Rock Ave. Crested Butte, & 650 South Ave., Grand Junction	160 ug/m^3 -- 103% of 24-hour standard 29.6 ug/m^3 -- 54% of annual average standard
PM2.5	650 South Ave., Grand Junction	22.7 ug/m^3 -- 64% of annual average standard
	650 South Ave., Grand Junction	9.5 ug/m^3 -- 61% of annual average standard

* For carbon monoxide, the site with the highest second maximum value is used for consistency with standards. For the eight-hour ozone standard, the site with the highest three-year average of the fourth-maximum value is used for consistency with standards. For PM2.5 the site with the highest three-year average of the 98th percentile concentration is used for comparison to the standard.

* * All values are directly comparable to actual standards. For example, particulate matter and eight-hour ozone values are the three-year average values for consistency with standards. In addition, the 24-hour PM2.5 standard was changed effective December 18, 2006 from 65 to 35 micrograms per cubic meter. Comparisons to the PM2.5 standard in these tables are based on the 35 micrograms per cubic meter standard. See the appendix for complete descriptions of standards.

Regional Air Quality Agencies

Central Front Range Region

Regional Air Quality Council
1445 Market St., Ste. 260
Denver, CO 80202
(303) 629-5450
www.raqc.org

Boulder County Health Department
3450 Broadway
Boulder, CO 80304
(303) 441-1100
www.BoulderCountyAir.org

Clear Creek County
Environmental Health Specialist
P.O. Box 2000
Georgetown, CO 80444
(303) 679-2335
www.co.clear-creek.co.us/

Denver Department of Environmental Health
Environmental Protection Division
1391 Speer Blvd., Ste. 700
Denver, CO 80204
(303) 285-4053
www.denvergov.org/deh/

Gilpin County
Environmental Health Officer
County Courthouse
Central City, CO 80427
(303) 582-5214
http://co.gilpin.co.us/

Jefferson County Department of Health and Environment
1801 19th St.
Golden, CO 80401
(303) 271-5755
www.co.jefferson.co.us

Tri-County Health Department
(Adams, Arapahoe and Douglas counties)
7000 E. Belleview, Ste. 301
Englewood, CO 80111
(303) 220-9200
www.tchd.org

Eastern High Plains Region

City of Lamar
102 E. Parmenter
Lamar, CO 81052
(719) 336-4376
www.ci.lamar.co.us/

Southeastern Land and Environment
109 W. Lee Ave., Ste. 1
Lamar, CO 81052
(719) 336-8988

Northeast Colorado Health Department
700 Columbine St.
Sterling, CO 80751
(970) 552-3741
www.nchd.org/

Otero County Health Department
County Courthouse, Rm 110
La Junta, CO 81050
(719) 384-2584

Northern Front Range Region

North Front Range Transportation and Air Quality Planning Council
210 East Olive St.
Fort Collins, CO 80524
(970) 221-6608
www.nfrmpo.org/

City of Fort Collins
Natural Resources Division
281 N. College
Fort Collins, CO 80522
(970) 221-6600
www.fcgov.com/airquality/

City of Greeley
1000 10th St.
Greeley, CO 80531
(970) 350-9783
www.greeleygov.com

Larimer County
Department of Health and Environment
1525 Blue Spruce
Fort Collins, CO 80524
(970) 498-6775
www.larimer.org

Weld County Department of Health
1555 N. 17th Ave.
Greeley, CO 80631
(970) 304-6415
www.co.weld.co.us/

Pikes Peak Region

Pikes Peak Area Council of Governments
15 S. Seventh Ave.
Colorado Springs, CO 80905
(719) 471-7080
www.ppacg.org

El Paso County
Department of Health and Environment
301 S. Union Blvd.
Colorado Springs, CO 80910
(719) 578-3137
www.elpasocountyhealth.org

Park County
Environmental Health Officer
P.O. Box 216
Fairplay, CO 80441
(719) 836-2771
www.parkco.us/

Teller County
Environmental Health Officer
P.O. Box 118
Woodland Park, CO 80863
(719) 687-3048
www.co.teller.co.us/

South Central Region

Pueblo City-County Health Department
151 Central Main
Pueblo, CO 81003
(719) 583-4323
www.co.pueblo.co.us/pcchd

Las Animas-Huerfano
District Health Department
412 Benedicta Ave.
Trinidad, CO 81082
(719) 846-2213
--and--
119 E. 5th St.
Walsenberg, CO 81089
(719) 738-2650
http://la-h-health.org/

Western Slope Region

Archuleta County
Box 1507
Pagosa Springs, CO 81147
www.archuletacounty.org/

City of Aspen
130 S. Galena
Aspen, CO 81611
(970) 920-5075
www.aspenpitkin.com

Chaffee County
Environmental Health Officer
P.O. Box 699
Salida, CO 81201
(970) 539-2124
www.chaffeecounty.org

Delta County Health Department
255 W. 6th St.
Delta, CO 81416
(970) 874-2165
www.deltacounty.com

Eagle County Environmental Health Division
P.O. Box 850
Eagle, CO 81631
(970) 328-8755
www.eaglecounty.us/envHealth/
Fremont County and Cañon City
P.O. Box 1460
Cañon City, CO 81215-1460
(719) 269-9011
www.canoncity.org

Garfield County
Environmental Health Officer
109 8th St., Ste. 303
Glenwood Springs, CO 81601
(970) 945-2339
www.garfield-county.com

Gunnison County
Environmental Health Officer
County Courthouse
Gunnison, CO 81230
(970) 641-4100
www.gunnisoncounty.org

Lake County
Environmental Health Department
P.O. Box 513
Leadville, CO 80461
(719) 486-1796
www.co.lake.co.us

Mesa County Health Department
P.O. Box 2000
Grand Junction, CO 81502
- or -
510 29 1/2 Rd.
Grand Junction, CO 81504
(970) 248-6960
www.health.mesacounty.us/environment

Moffat County and Rio Blanco County
Sanitarian
221 Victory Way
Craig, CO 81624
(970) 824-2643
www.co.moffat.co.us

Montezuma County Health Department
County Courthouse
Cortez, CO 81321
(970) 565-3056
www.co.montezuma.co.us

Montrose County
Environmental Health Officer
P.O. Box 1289
Montrose, CO 81401
www.co.montrose.co.us

Pitkin County
0405 Castle Creek Rd.
Aspen, CO 81611
(970) 920-5070
www.aspenpitkin.com

Routt County
Environmental Health Department
Box 770087
Steamboat Springs, CO 80477
(970) 879-0185
www.co.routt.co.us

San Juan County
1557 Greene St.
Silverton, CO 81433
www.sanjuancountycolorado.us/

San Miguel Environmental Health Department
P.O. Box 4130
Telluride, CO 81435
(970) 728-0447
www.sanmiguelcounty.org

Summit County
Environmental Health Department
Box 626
Frisco, CO 80443
(970) 668-0727
www.co.summit.co.us/

Town of Vail
75 S. Frontage Rd.
Vail, CO 81657-509
(970) 479-2138
www.vailgov.com/

Appendix

Colorado Air Quality Regulations
Health-Related Air Pollutants
Enforcement Report Summary, 2007-2008

Colorado Air Quality Regulations

www.cdphe.state.co.us/ap/regoverview.html

Procedural Rules

The rules that the commission operates under for its regular monthly meetings and public hearings.

Ambient Air Quality Standards Regulation

This regulation establishes ambient air quality standards for the state of Colorado and dictates monitoring procedures and data handling protocols. It also defines nonattainment area boundaries for locations in the state which historically have violated federal and state air quality standards. In addition, the regulation contains the state's urban visibility standard and sets emission budgets for nonattainment areas.

State Implementation Plan Specific Regulation

This regulation defines specific requirements concerning air quality control strategies and contingency measures for nonattainment areas in the state.

Particles, Smoke, Carbon Monoxide and Sulfur Oxides

Regulation No. 1

Regulation No. 1 sets forth emission limitations, equipment requirements and work practices (abatement and control measures) intended to control the emissions of particles, smoke and sulfur oxides from new and existing stationary sources. Control measures specified in this regulation are designed to limit emissions into the atmosphere and thereby minimize the ambient concentrations of particles and sulfur oxides.

Odor Control

Regulation No. 2

Regulation No. 2 sets standards for allowable odor contaminants for different land-use areas in the state and outlines control measures that can be taken to bring violators into compliance.

Air Pollution Emission Notices-Permits

Regulation No. 3

Regulation No. 3 requires air pollution sources to file Air Pollution Emission Notices. It also requires that new or modified sources of air pollution – with certain exemptions – obtain preconstruction permits. Very large facilities also are required to obtain operating permits.

Woodburning Controls

Regulation No. 4

Regulation No. 4 requires new stove and fireplace inserts to meet federal certification in specified areas of the state.

New Source Performance Standards

Regulation No. 6

Regulation No. 6 sets standards of performance for specific new stationary sources in Colorado. The regulation is designed to bring new sources into compliance with the U.S. Environmental Protection Agency's New Source Performance Standards. In addition, the regulation sets standards for new industries that are unique to Colorado for which the EPA has not yet set standards.

Volatile Organic Compounds Control

Regulation No. 7

Regulation No. 7 controls the emissions of volatile organic compounds, primarily in the Denver-metro area. It sets standards and mandates controls for specific types of volatile organic compound sources.

Hazardous Air Pollutants Control

Regulation No. 8

Regulation No. 8 sets forth specific work practices, emission control requirements and standards for hazardous air pollutants.

Open Burning, Prescribed Fire and Permitting

Regulation No. 9

Regulation No. 9 applies to all open burning activities throughout the state to control smoke and emissions from such fires. The regulation sets forth requirements for permitting including prescribed fires, controlled burns and significant users of prescribed fires.

Transportation Conformity

Regulation No. 10

Regulation No. 10 defines the criteria the Colorado Air Quality Control Commission uses to evaluate the consistency between state air quality standards/objectives, and transportation planning and major construction activities across the state, as defined in state implementation plans.

Motor Vehicle Inspection Program

Regulation No. 11

Regulation No. 11 requires automobile emission inspection and maintenance programs to be implemented in specified areas of the state for gasoline-powered on-road vehicles. These programs apply to businesses, industry and the general public.

Diesel Vehicle Inspection Program

Regulation No. 12

Regulation No. 12 defines the state's diesel-powered vehicle emission inspection and maintenance program for on-road vehicles.

Oxygenated Fuels Program

Regulation No. 13

Regulation No. 13 requires the use of oxygenated fuels in gasoline-powered motor vehicles in Colorado's Automobile Inspection and Readjustment program areas, except Colorado Springs, from Nov. 1 through Feb. 7.

Chlorofluorocarbons

Regulation No. 15

Regulation No. 15 identifies the requirements to control emissions of ozone-depleting compounds from both stationary and mobile sources.

Street Sanding and Sweeping

Regulation No. 16

Regulation No. 16 sets specification standards for street sanding material and street sweeping practices in the Automobile Inspection and Readjustment program area, and the Denver-metro fine particle nonattainment area.

Acid Rain Control

Regulation No. 18

Regulation No. 18 sets forth the requirement for implementing the state's acid rain program. This program is adopted by reference from the federal program found in 40 C.F.R., Part 72 as in effect on Jan. 6, 1994.

Lead Based Paint

Regulation No. 19

Regulation No. 19 defines the requirements for certifying lead abatement professionals and work practice measures.

Pollutants	Health Effects	Areas Affected in Colorado
Carbon Monoxide (CO) is a colorless, odorless and tasteless gas. It results from incomplete combustion; its major sources in urban areas are motor vehicle emissions and woodburning.	Carbon monoxide affects individuals by depriving the body of oxygen. It enters the body through the lungs and inhibits the body's ability to transport oxygen. Carbon monoxide can reduce a healthy person's ability to perform manual tasks, and it can affect pregnant women, fetuses, anemic individuals and persons with cardiovascular diseases.	No violations statewide since 1995.
Particulate Matter (PM) describes the tiny particles of solid or semi-solid material found in the atmosphere, often referred to as dust. It is classified according to size: •TSP= total suspended particles •PM10 = particles smaller than 10 microns •PM2.5= particles smaller than 2.5 microns	Particulate matter can reduce lung function, aggravate respiratory conditions and may increase the long-term risk of cancer or development of respiratory problems.	Elevated PM levels occur in high-density urban areas and communities where blowing dust or residential burning is a problem. The most recent exceedances were in Alamosa and Lamar in 2002 and Denver in 2001.
Ozone (O_3) is a highly reactive form of oxygen; it is not emitted directly from a source, rather it is formed from the reaction of pollutants with sunlight. Ground-level ozone (photochemical smog) should not be confused with stratospheric ozone – the protective ozone layer located in the upper atmosphere.	Exposure to high concentrations of ozone can impair the function of lungs; it may induce respiratory symptoms in individuals with asthma, emphysema or reduced lung function; it potentially can reduce immune system capacity; and it can act as an irritant to mucous membranes of eyes and throat.	Suburban areas downwind of urban areas are most affected. Violation of the eight-hour standard in the Denver-metro area last occurred during the summers of 2007 and 2003.
Sulfur Dioxide (SO_2) is a colorless gas with a pungent odor at high concentrations; it is highly soluble with water and is a major contributor to "acid rain." It is emitted primarily from combustion sources.	Sulfur dioxide can aggravate an individual's respiratory tract, impair pulmonary functions and increase the risk of asthma attacks.	All of Colorado has met the standard.
Lead (Pb) exists in the atmosphere primarily as an inhalable particulate; its primary source is motor vehicles that burn leaded gasoline.	Lead can impair an individual's production of hemoglobin; cause intestinal cramps, peripheral nerve paralysis, anemia and severe fatigue.	All of Colorado has met the standard.
Asbestos is a mineral fiber found in building materials and automobile brake linings.	Asbestos can cause respiratory problems and increase the risk of lung cancer. It can cause asbestosis – a scarring of the lung tissue which restricts breathing; it also can cause mesothelioma – cancer of the lung and intestinal lining.	Buildings where asbestos has been used are of primary concern, particularly during removal or renovation.
Nitrogen Dioxide (NO_2) is a gas contributing to photochemical smog (ozone) production. It is a by-product of oxides of nitrogen emitted from combustion sources and motor vehicles.	Nitrogen dioxide can increase respiratory problems, cause mild symptomatic effects in asthmatic individuals and increase susceptibility to respiratory infections.	All of Colorado has met the standard.
Hazardous Air Pollutants are pollutants known or suspected of causing cancer or other serious health effects.	Hazardous air pollutants can increase risk of cancer, sterility and nervous system disorders.	Statewide

State & Federal Air Pollutant Standards	State & Local Programs/Strategies To Reduce Air Pollutants
Two state and federal carbon monoxide standards exist. Both standards average the concentration of carbon monoxide across specified time periods – one hour and eight hours. The 1-hour standard is set at 35 parts per million and the 8-hour standard is set at 9 parts per million.	Enhanced Automobile Inspection and Maintenance Program, Oxygenated Gasoline Program, transportation planning, travel reduction programs, residential burning controls, stationary source controls and pollution prevention programs, High Pollution Advisory Program.
PM2.5 Standards: • Annual mean standard must not exceed 15 micrograms per cubic meter averaged over three years. • 24-hour standard is 35 micrograms per cubic meter applied to the 3-year average of the 98th percentile value. **PM10 Standards** • 24-hour standard of 150 micrograms per cubic meter cannot be exceeded more than once per year on average over three years	Diesel Emissions Control Program, street sanding and street sweeping improvements, transportation planning, Basic and Enhanced Automobile Inspection and Maintenance Programs, travel reduction programs, residential burning controls, stationary source controls and pollution prevention programs, High Pollution Advisory Program.
Eight-hour standard: An area will attain the standard when the 4th highest daily maximum 8-hour concentration, averaged over three years, is equal to or below 0.085 parts per million (0.075 ppm effective May 27, 2008). **One-hour standard:** An area violates the standard when the hourly peak ozone concentration is 0.125 ppm or greater more than three times in three years.	Enhanced Automobile Inspection and Maintenance programs, gasoline transfer controls, substitution of non-reactive hydrocarbons, solvent control and pollution prevention programs, stationary source controls and summertime Ozone Advisory Program.
Three state and federal sulfur dioxide standards exist. Each considers average concentration levels across specified time periods. An annual standard is set at 0.03 parts-per-million, a 24-hour standard is set at 0.14 ppm and a 3-hour standard is set at 0.5 ppm.	Colorado Air Quality Control Commission regulations control sulfur dioxide emissions from industry.
The federal lead standard is averaged across 3-month time periods. During any three months, the lead concentration is not to exceed 1.5 micrograms per cubic meter. The state lead standard is averaged across 1-month time periods and is not to exceed 1.5 micrograms per cubic meter.	Leaded gasoline phase out and stationary source controls.
The state standard for asbestos is set at 0.01 fibers per cubic centimeter or 70 structures per square millimeter depending on the measurement method.	Colorado Air Quality Control Commission Regulation No. 8 controls asbestos removal and abatement statewide.
The nitrogen dioxide standard averages concentration levels on an annual basis and allows up to 0.053 parts per million of nitrogen dioxide per year.	Colorado Air Quality Control Commission regulations control the emissions of oxides of nitrogen.
Approximately 20 federal and state standards exist and are control technology based.	Residential burning controls and state/local pollution prevention programs reduce the prevalence of hazardous air pollutants.

Stationary Sources and Indoor Environment Program Enforcement Update

Purpose

This portion of the report is intended to satisfy the requirement in section 25-7-105(5)(c), CRS, which requires the Colorado Air Quality Control Commission to prepare and make available to the public a report that includes a list of all alleged violations of emission control regulations, and show the status of control procedures in effect with respect to each such alleged violation.

The full enforcement report is available on-line at www.cdphe.state.co.us/ap/enforcerept.html. A summary of enforcement statistics is provided on the following page.

Enforcement Program

The Field Services Unit regulates stationary sources, including open burning and odors. The unit has been focusing more on early settlement agreements in lieu of issuing Notices of Violation and Compliance Orders. Upon discovery of a violation, the inspector typically will draft and send a Compliance Advisory (CA) to notify the source of the noncompliance issues. The Compliance Advisory includes a statement that the company should contact the inspector to discuss the noncompliance issues. Upon discussing the issue internally and with the company, unit staff will decide whether to dismiss the violation, issue a Warning Letter, proceed with early settlement discussions or proceed with a formal enforcement action (issue a Notice of Violation). Many of the cases are settled prior to issuance of a Notice of Violation.

The Chlorofluorocarbon Unit enforces Regulation No. 15 concerning the control of chlorofluorocarbons. Most of the enforcement actions by this unit involve notification and certification requirements. As a result, the Chlorofluorocarbon Unit often sends out early settlement agreement offers and Compliance Advisories. It issues few Notices of Violation.

The Asbestos Unit regulates companies involved in the abatement of asbestos. Building owners and schools also are affected by asbestos control rules. In regulating schools, the Asbestos Unit issues Notices of Noncompliance (NONs) which require the school to take certain steps to come into compliance. Typically, if the school comes into compliance within the stated time period, the division does not require the school to pay a civil penalty. The Asbestos Unit is not legally required to, but typically does issue a Notice of Violation (NOV) at the onset of an enforcement action. After a Notice of Violation conference is held, the Asbestos Unit issues a Warning Letter, dismisses the action, attempts to reach an early settlement agreement in the form of a Compliance Order on Consent (COC), or issues a Compliance Order (CO).

The table on the following page is a summary of the number of enforcement documents.

Enforcement Statistics July 2007 - June 2008

Actions	Field Services Unit	Asbestos Unit	CFC Unit
Warning Letters	19	19	19
Compliance Advisories	80	0	0
Notices of Violations	3	38	0
Notices of Noncompliance (schools only)	0	27	n/a
Compliance Orders	1	18	0
Compliance Orders on Consent	40	7	0
Early Settlement Agreements	55		
AQCC Hearings	0	0	0
Referrals to Attorney Generals Office	0	1	0
Referrals to EPA	0	0	0

Glossary of Terms

Compliance Advisory (CA): The division issues these to provide timely notice to a facility of apparent violations found during an inspection. The division may or may not initiate a formal enforcement action, depending on the type of violation and the response of the facility.

Compliance Order (CO): If the division determines that a violation or noncompliance did occur after a notice of violation conference, it may issue a compliance order. The order includes the final determinations of the division regarding the violation or noncompliance, a summary of the proceedings at the notice of violation conference, and an evaluation of the evidence considered by the division in reaching its final determination of law.

Compliance Order on Consent (COC): A settlement agreement or express terms, mutually agreed upon in writing, between the recipient of an informal notice of noncompliance, notice of violation, or compliance order and the division, resolving the discovered noncompliance issues.

Noncompliance Penalty (NCP): A penalty assessed pursuant to § 25-7-115(5), C.R.S., to ensure a source does not reap the economic benefit of noncompliance with a federal requirement, as required under 42 U.S.C. § 7420.

Notice of Noncompliance (NON): Issued to a school and requires the school to take certain steps to come into compliance. If the school comes into compliance within the stated time period, the division does not require the school to pay a civil penalty.

Notice of Violation (NOV): Issued by the division to provide specific notice to a company of the provisions alleged to have been violated, and the division's factual basis and legal conclusions for the allegations.

Warning Letter: A written notification to a source that the division has documented a violation, that further recurrence could result in enforcement action being taken, but that no further enforcement action will result directly from the instant violation.