

# SUMMARY

## 2004 Voluntary Ozone Reduction Program



**keep it clean**

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Air Quality Control Commission

Boulder County Health Department

CH2M HILL

City and County of Denver, Employee Transportation Coordinator Network

Colorado Department of Public Health and Environment

Colorado Petroleum Association

Colorado Select NAPA Auto Care Group

Denver Regional Council of Governments

Envirotest Systems, Corp. (Air Care Colorado)

John's 4x4 Center

Metropolitan Area Local Governments, in specific the Cities of Aurora, Arvada, Boulder, and

Denver

Suncor Energy U.S.A.

Tri-County Health Department

U.S. 36 Transportation Mobility Organization

American Lung Association of Colorado

Art Students League of Denver

## OVERVIEW OF 2004 VOLUNTARY OZONE REDUCTION PROGRAM

The Regional Air Quality Council (RAQC) has concluded the sixth year of its Voluntary Ozone Reduction Program. The 2004 program, launched with numerous stakeholders from the metropolitan-Denver area, worked with local governments, businesses, transportation organizations, and citizens to educate people about the health effects of ozone pollution and voluntary activities to help reduce it.

Ground-level ozone pollution is a summertime pollutant that occurs when volatile organic compounds (VOCs) and nitrogen oxides (NO<sub>x</sub>) react in the presence of heat and sunlight. These pollutants come from everyday items such as local industry, gasoline-powered vehicles and lawn equipment, and household paints, stains, and solvents.

Ozone pollution can cause breathing problems and respiratory infections in the elderly, young, and those with pre-existing ailments. Even healthy people who exercise or work outdoors can experience breathing problems when exposed to elevated ozone levels.

In 2004, the metro-Denver area achieved the new, stricter 8-hour standard set by the U.S. Environmental Protection Agency (EPA) after violating it during the 2003 summer season (see the section on "Ozone Standards" for more information).

It is imperative that the metro-Denver area continue its efforts to reduce ozone pollution to improve air quality and public health. In addition, it is important to make sure ozone levels are below the standard for years to come to reduce the amount of mandatory control measures that may have to be introduced in order to meet federal requirements (see the section on the "Early Action Compact – Ozone Action Plan" for more information).

The 2004 Voluntary Ozone Reduction Program aimed to reach as many people as possible to increase awareness about ground-level ozone pollution. The program consisted of the following activities:

- A continuation of the ozone advisory program, designed to warn people in advance of potential high ozone days and encourage changes in ozone-forming activities;
- Car Care Fairs for Cleaner Air – partnered with Colorado Select NAPA Auto Care Group and metro-area local governments to host twelve clinics;
- Targeted public service announcements in three large volume, metro-area movie theaters;
- Continuation and expansion of the "Put a Cap on Ozone" gas cap replacement program, focusing on local governments;
- Changes in operations by local governments to help reduce ozone-causing volatile organic compounds (VOCs);
- Continuations of a public information web site where regional communicators downloaded ready-to-insert articles for newsletters, web sites, and cable television stations;
- Continuation of the "Repair Your Air" campaign, which identified high-emitting vehicles using remote sensing technology and offered motorists up to \$500 in repairs; and
- Participated in public events such as Bike to Work Day and RideSmart *Thursdays*

This 2004 program was made possible through support from the Colorado Department of Public Health and Environment (CDPHE) and Envirotest Systems, Inc.

Additional support came from the Colorado Select NAPA Auto Care Group and local governments throughout the region.

## **OZONE STANDARDS**

### ***8-Hour Ozone Standard***

After a several-year court battle, EPA entered into a settlement agreement with national environmental organizations in November 2002 regarding the timeline for making nonattainment designations for the 8-hour standard.

EPA committed to promulgate nonattainment designations by April 15, 2004. Governors had to recommend designations by April 15, 2003.

The new ozone standard limits the allowable level of ozone to 0.08 parts per million (ppm) averaged over eight hours. A violation of the 8-hour standard occurs when the three-year average of the 4th maximum concentration at any given monitor reaches or exceeds .085 parts per million (ppm) or 85 parts per billion (ppb).

It is important to continue our efforts to ensure that the region meets the new standard by 2007, a date set by EPA.

### ***1-Hour Standard***

EPA approved the Denver Region's 1-Hour Ozone Redesignation Request and Maintenance plan in the Federal Register on September 11, 2001 and the attainment redesignation became effective on October 11, 2001. The region has not violated the 1-hour standard since 1988.

The federal 1-hour ozone standard is 0.12 ppm and a violation occurs when the three-year average of exceedances is greater than one per year.

## **EARLY ACTION COMPACT – OZONE ACTION PLAN**

State and regional agencies in the metro-Denver area entered into a voluntary agreement with EPA in December 2002 that outlines a process for achieving attainment with EPA's new 8-hour ozone standard in an expeditious manner.

Called an Early Action Compact for Ozone ("the EAC"), the agreement sets forth a schedule for the development of technical information and the adoption and implementation of necessary control measures into the state implementation plan (SIP) in order to comply with the 8-hour standard by December 31, 2007 and maintain the standard beyond that date.

In exchange for implementing strategies earlier than the traditional nonattainment process, EPA agreed to defer a potential nonattainment designation.

On April 15, 2004, EPA designated the seven-county, metro-Denver region, in addition to portions of Larimer and Weld Counties, as a deferred nonattainment area for the new 8-hour standard.

The region has until the end of 2005 to fully implement the strategies outlined in the EAC. Failure to meet the obligations of the agreement will result in immediate reversion to the traditional nonattainment process. The Ozone Action Plan can be obtained through the RAQC's web site at [www.raqc.org](http://www.raqc.org).

While the EAC outlines a variety of mandatory strategies, it does not include a voluntary outreach and education component. It is vital that the RAQC and its partners continue their outreach efforts in order to raise awareness about ozone.

## 2004 OZONE MONITORING DATA

Ozone levels during the 2004 ozone season did not exceed the new 8-hour standard, therefore bringing the region back into compliance. However, the region remains at risk of violating the standard over the next few years. Ongoing ozone mitigation efforts will continue to be critical.

The basis for the federal 8-hour ozone standard is the 4<sup>th</sup> maximum concentration at each monitor. In 2004, the Lookout Mountain monitor, a temporary location, recorded a 4<sup>th</sup> maximum value of 81 ppb, which was the highest reading for the 2004 season. No other monitor recorded a value above 80 ppb.

The permanent monitors at Chatfield, NREL, and Rocky Flats North, which recorded levels above the standard of 85 ppb in 2003, remained within the standard in 2004. The three-year average for the Chatfield and Rocky Flats North monitors was 84 ppb and the NREL monitor averaged out at 83 ppb. All other monitors recorded averages well below the 85 ppb limit.

Although the Denver region remained within the federal guidelines for the 8-hour standard, it will remain imperative that the area maintain lowered ozone levels over the next several years to ensure attainment with the standard in future years.

No monitors violated EPA's existing 1-hour standard.

Additional ozone monitoring data for the 2004 summer ozone season, as well as previous seasons, are contained in tables in the Appendix.

## OZONE ADVISORY PROGRAM

### *Description*

The Technical Services staff of the Air Pollution Control Division (APCD) at the CDPHE developed a system to forecast imminent meteorological conditions that support the development of ozone concentrations above 75 ppb, which are reported on a daily basis.

APCD staff meteorologists used national and local weather data and an array of national predictive models to make the advisory calls, which take effect daily at 4:00 p.m. The advisories remain in effect for the following 24 hour period.

Using the APCD's advisory calls, the RAQC faxed and e-mailed ozone action alerts to the media, local governments, businesses, and citizens when the conditions were right for elevated ozone levels. In addition, the RAQC posted ozone alerts to the website so people visiting the site could also access the information.

This year, the RAQC recreated the design and content of the advisories in an attempt to increase awareness. A series of new action graphics were developed by a professional graphic designer to accompany action tips, such as "refuel personal and fleet vehicles as late in the day as possible." In addition to the new graphics, the alerts included information on how ozone is formed, the health affects, and contact information.

The RAQC faxed the new ozone action alerts to over 300 local governments, media outlets, businesses, and citizens, including two Spanish television stations.

The ozone alerts allowed local governments to make changes in operational behavior to reduce VOC emissions. It was also an opportunity for them to inform their citizens of the high ozone day through e-mail, signs, and web site and cable updates.

The alerts provided the media with information to broadcast the potential of high ozone and to encourage changes in ozone-causing behaviors.

**Results**

During the 2004 ozone season, 14 alerts were issued, including three in June, eight in July, and three in August. The RAQC received informal feedback from e-mail subscribers who said the newly-formatted alerts were more helpful and visually stimulating.

**CAR CARE FAIRS FOR CLEANER AIR/  
GAS CAN EXCHANGE**

**Description**

The RAQC, in conjunction with the Colorado Select NAPA Auto Care Group, hosted 11 Car Care Fairs across the metro area and one in Fort Collins for a total of 12 events. These fairs helped educate motorists on maintaining optimum gas mileage and overall vehicle performance as well as provided information on reducing emissions and safety risks. NAPA-certified technicians volunteered their time and provided the visual inspections for all participating motorists. The technicians inspected more than 85 components of the vehicles and provided specific information to motorists about their respective vehicles.

In addition, motorists were invited to trade in their old gas cans in exchange for free non-spill, non-permeable replacements.

**Results**

RAQC, NAPA, and volunteers hosted a total of 12 Car Care Fairs on Saturday, April 24, 2004 in the following Cities:

- Arvada
- Aurora
- Boulder

- Broomfield
- Denver
- Fort Collins
- Lakewood
- Longmont
- Northglenn
- Parker
- Westminster
- Wheat Ridge

NAPA technicians and volunteers inspected a total of 482 vehicles. A total of 109 old gas cans were recycled and 311 of the new non-permeable gas cans were distributed. This event also provided an opportunity for the RAQC to hand out informational brochures and fact sheets with ozone reduction tips. The event was a success and the RAQC and NAPA hope to double attendance and the number of locations for the 2005 event.

**“PUT A CAP ON OZONE” GAS CAP  
REPLACEMENT PROGRAM**

**Description**

From early spring through fall of 2004, the RAQC continued the “Put a Cap on Ozone” gas cap replacement program by conducting employer gas cap fairs around the region.

The RAQC expanded the program to test gas caps of employees at major employer sites in 2001 and has continued with this approach. This year the RAQC continued its efforts by conducting 5 employer-hosted gas cap fairs. The focus of this year’s program was on local government sites.

According to the EAC, on-road mobile source emissions account for nearly 30 percent of total anthropogenic emissions. In the summertime, a faulty gas cap can allow one gallon of gas to evaporate every two weeks. Pollutants in evaporative emissions are a key ingredient in ground-level ozone formation.



“Put a Cap on Ozone” provided free replacement gas caps to any motorist whose vehicle either failed the pressure test or had a missing gas cap altogether.

The RAQC issued a voucher for a \$5 credit toward the purchase of a new gas cap at any NAPA Auto Parts store in the metro area to drivers whose vehicles required unusual or specialized gas caps.

In addition, the “Put a Cap on Ozone” program educated thousands of motorists about the health and regulatory benefits of properly-working gas caps as an ozone pollution control strategy.

### **Results**

At the end of the ozone season, the “Put a Cap on Ozone” tested a total of 336 gas caps at local government and employer gas cap fairs. Of the 336 tested, 17 gas caps were replaced and nine gas cap vouchers were awarded. This is estimated to reduce VOC emissions by about 13 pounds per day, nearly five tons per year.

The RAQC successfully tested gas caps at five local government and employer sites, including:

- **City of Arvada**  
*tested 62 gas caps; replaced 3*
- **City of Aurora**  
*tested 68 gas caps; replaced 3*
- **CH2M Hill**  
*tested 62 gas caps; replaced 3*
- **City of Boulder**  
*tested 57 gas caps; replaced 7*
- **City and County of Denver**  
*tested 87 gas caps; replaced 1*

In 2005, the RAQC plans to continue the gas cap testing program with a focus on local government fleet vehicles.

## **TARGETED MOVIE THEATER PROMOTIONS**

### ***Description***

The 2004 ozone season was the third summer the RAQC participated in a paid advertising campaign by running a colorful and informational slide in movie theaters throughout the region. The slide listed three things people can do to help reduce vehicle-related emissions, which form ground-level ozone pollution.

These movie theater public service announcements were developed to target the summer movie going public at the three of the largest volume theaters in the Denver area. The slides ran 20 minutes before each movie and were shown between three and four times before the movie began. By reaching people with a short, direct message that they saw up to four times, the RAQC was able to educate thousands of citizens about air quality.

### **Results**

The movie slides were shown at the following movie theaters during the summer:

- **AMC Flatiron Crossing (Broomfield)**  
*7 screens, May 21 - June 18*
- **AMC Highlands Ranch**  
*15 screens, May 21 - June 18*
- **AMC Westminster Promenade**  
*15 screens, May 21 - June 18*

It is estimated that approximately 248,000 people attended movies in the three AMC theatres (total of 37 screens) during the weeks that the public service announcement ran.



## **MEDIA OUTREACH**

### ***Description***

As part of its effort to educate the general public about ozone reduction tools and strategies, the RAQC conducted media outreach to help increase public awareness about ozone's health effects and ways to reduce ozone pollution.

The RAQC sent out press kits to all local stations the week before the Car Care Fairs and the start of ozone season to draw media attention and educate media personalities on the subject. Throughout the summer, media highlighted ozone alerts in response to advisories issued by the CDPHE and released by the RAQC.

### ***Results***

Media broadcasted numerous television stories and ozone alert announcements during the 2004 ozone season. Several stations – including WB2 News, News 4, 7 News, and 9 News – all aired ozone-related stories or included information about the alerts in the ticker and the bottom of the television screen.

In addition, Clear Channel Radio, Jefferson Pilot, and Metro Network Radio stations also conducted radio coverage and interviews.

Also, ozone-related stories were printed in *The Denver Post*, *The Denver Rocky Mountain News*, *The Boulder Daily Camera*, *The Longmont Daily Times-Call*, and other local community newspapers.

This year, the RAQC continued to update a virtual press room on its web site – [www.raqc.org](http://www.raqc.org) – where media can easily access press releases, fact sheets, contact information, and information about the RAQC.

The RAQC plans to increase its media outreach efforts in 2005 in an attempt to raise overall awareness and understanding about ozone issues.

## **PUBLIC OUTREACH**

### ***Description***

The public outreach effort of the Voluntary Ozone Reduction Program expanded on the accomplishments of the previous years. RAQC staff made presentations, staffed booths at special events and festivals, and distributed information about ozone pollution. The RAQC mailed and distributed ozone alert signs and tip cards to contacts.

The RAQC web site – [www.raqc.org](http://www.raqc.org) – contained information about ozone pollution with much of it downloadable. RAQC staff was responsible for faxing and e-mailing ozone action alerts to local governments, local English and Spanish language media, businesses, and citizens.

In an effort to reach a younger population in 2004, the RAQC and Envirotest partnered with The Art Students League of Denver to solicit “Clean Air” artwork from children in grades two through 12 by holding a poster contest.

Additionally, the RAQC participated in the Denver Regional Council of Governments’ (DRCOG) RideSmart *Thursdays*, which encourages citizens to use an alternative form of transportation at least one day a week.

### ***Results***

RAQC staff presented information about ozone pollution to several organizations, including the Boulder County Clean Air Consortium and the U.S. 36 Transportation Mobility Organization.

In addition, the RAQC utilized the “Citizens Choose Clean Air” card, which provides the public with the top ten ways citizens can “choose clean air.” The card was distributed at outreach events throughout the summer.

The RAQC also distributed over 200 small, key chain tire gauges with the message “Do Your Share for Cleaner Air,” encouraging

motorists to check to make sure their tires are properly inflated to increase gas mileage.

As part of Bike to Work Day 2004, which was held on June 23, the RAQC distributed 500 bike reflectors that said, "I am part of the solution to reduce pollution."

The children's poster contest was a huge success and four winners were picked who received awards and gift certificates. The winning art was transformed into a "Clean Air" poster that was unveiled at the Art Students League's Earth Day Art Exhibition on April 2.

Ozone articles were also placed in local government newsletters, on web sites and cable access television stations, reaching thousands of households, including those in Arvada, Aurora, Denver, Golden, Lakewood, Northglenn, Parker, Thornton and Westminster.

The RideSmart *Thursdays* campaign, which the RAQC participated in, "is credited with getting approximately 5,500 cars off the road each week, saving 59,000 gallons of gasoline, reducing vehicle operating costs by \$115,000, and reducing regulated emissions by 43 tons," according to the DRCOG web site.

## **LOCAL GOVERNMENT OPERATIONAL CHANGES**

### ***Description***

Metropolitan area local governments have been a significant partner in the RAQC's past ozone reduction efforts. Many local governments coordinated with Public Works, Parks and Recreation, Fleet Maintenance, Environmental Services, Facility Maintenance, and Public Information departments to make changes in operational procedures and to get the word out about ozone pollution and ways to reduce it. In addition, many local governments assisted with the planning and implementation of the Car Care Fair events.

## **Results**

After six years of working with metro-area local governments on ozone awareness and ozone reduction activities, most have started to integrate ozone reduction activities into summertime operations. In specific, many local government employees currently:

- stop at the click when refueling both city and private vehicles;
- limit the use of gas-powered lawn equipment; and
- avoid vehicle idling.

Metro area local governments also e-mailed employees on ozone alert days, displayed ozone alert signs, published newsletter articles, used cable access television, and pursued other avenues to tell citizens and employees about ozone pollution.

A major focus for this year's efforts was to introduce the RAQC's web page designed specifically for local government communicators. The web page contains a ready-to-insert article for newsletters or other publications. In addition, it includes ozone graphics for use on web sites or cable access television.

Additionally, the RAQC began to incorporate fleet gas cap testing into the "Put a Cap on Ozone" program for local government fleet vehicles. Many fleet managers were excited about this opportunity and pledged their support for the program in years to come.

## **NORTH FRONT RANGE OUTREACH**

For the first time, the RAQC coordinated with local governments in the North Front Range (NFR) region as well as the NFR Metropolitan Planning Organization in an attempt to consolidate our messages. The RAQC shared its materials, messaging, and successful event planning and advertising

techniques so that there would be consistency with NFR and metro-area ozone outreach efforts. RAQC staff met several times with NFR representatives and will continue its partnership in 2005.

## **SUMMARY**

The 2004 Voluntary Ozone Reduction Program complemented and expanded on the efforts of the previous five years. The RAQC conducted outreach not only with local governments, but also with businesses, transportation management organizations, employee transportation networks, citizens, and other concerned groups and citizens. This enabled the RAQC to reach a broader audience with the ozone pollution reduction message.

The RAQC also cultivated relationships with media to ensure accurate and pertinent coverage. This helped deliver a consistent message to audiences across the metropolitan area.

## **FUTURE PLANS**

Although the region is now in compliance with EPA's new 8-hour ozone standard, it is vital that the RAQC and its partners continue to implement its voluntary program to prevent future nonattainment.

The RAQC will not only continue its past efforts, but increase future efforts as part of the 2005 Voluntary Ozone Reduction Program. The RAQC recently received a federal Congestion Mitigation / Air Quality grant through a joint process managed by the Denver Regional Council of Governments (DRCOG) and the Colorado Department of Transportation (CDOT). The funding will assist with increased ozone outreach and education efforts in 2005. In particular, the RAQC and its partners will:

- Continue the ozone advisory program, but make some changes in order to increase the level to which people recognize and understand them;
- Work with NAPA to host 25 community Car Care Fairs across the metro area, including a gas can exchange;
- Work with Black & Decker and a large home improvement retailer to host a series of lawn equipment and gas can exchanges;
- Launch a comprehensive, multi-media advertising campaign to increase awareness and understanding of ozone-related issues;
- Develop a local government fleet gas cap testing program with 10 participating municipalities;
- Create a new web page dedicated to ozone-related topics and programs that will be linked from the RAQC's existing web site;
- Host an air quality art or radio contest for children in grades kindergarten through 12;
- Develop a local government sub-grant program to award funding to public information offices to assist with ozone education and outreach;
- Work with a professional public relations, advertising, and marketing firm to develop a new, memorable logo and slogan for the ozone program;
- Conduct extensive media outreach and education and leverage partnerships with media outlets to increase ozone-related news coverage;

- Attend and participate in special events – such as Bike to Work Day, RideSmart *Thursdays*, and others – in order to raise awareness and increase education; and
- Hire a professional public opinion and research firm to conduct a combination of telephone, online, and focus group surveys in order to gather both qualitative and quantitative results from the RAQC's increased education and outreach activities.

The success of the Voluntary Ozone Reduction Program over the past five years has been dependent upon partnerships with local governments, state and regional agencies, and businesses in the metro Denver region. The RAQC looks forward to continuing and expanding these partnerships in 2005.

*For additional information about the 2004 Voluntary Ozone Reduction Campaign or the RAQC's plans for 2005, please contact Sara O'Keefe at 303-629-5450, ext. 220.*