

2009 Ozone Report



Regional Air Quality Council
1445 Market Street, Suite 260
Denver, CO 80202
303.629.5450
raqc.org | ozoneaware.org

TABLE OF CONTENTS

ACKNOWLEDGEMENTS	2
OVERVIEW	3
STANDARDS AND STATUS	4
REGULATORY PLAN	5
NUMBERS	5
VOLUNTARY PLAN	6
COMPONENTS	7
Ozone Action Alerts	7
Media Advertising	8
Media Relations	8
Public Outreach	9
Web Site	9
Informational Items	9
Summer Chill Campaign	10
Mow Down Pollution	10
AirWaves High School Radio Scholarship Program	11
Bike to Work Day	11
Local Government Outreach	11
SUMMARY	12
FUTURE PLANS	12
APPENDICES	15
Data Appendices	15
Creative Appendices	23

2009 OZONE REPORT

The 2009 Ozone Education and Outreach Program was made possible by funding from the following organizations.

Colorado Dept. of Public Health and Environment	Colorado Department of Transportation
Denver Regional Council of Governments	Envirotest Systems, Corp. (Air Care Colorado)
Federal Highway Administration	Suncor Energy Inc.

See “Overview” section for more detailed funding information.

ACKNOWLEDGEMENTS

The Regional Air Quality Council (RAQC) would like to thank its partners for their participation in the 2009 “Let’s Take Care of our Summer Air” ozone education and outreach program. The contributions of the below partners are greatly appreciated and have added to the success of the program.

- American Lung Association of Colorado
- Colorado Department of Public Health and Environment, Air Pollution Control Division
- Circle Graphics, Inc.
- Colorado Department of Transportation
- Denver Regional Council of Governments
- Envirotest Systems, Corp. (Air Care Colorado)
- Federal Highway Administration
- JohnstonWells Public Relations
- Launch Advertising
- Local governments throughout the Denver region, specifically:
 - Arapahoe County
 - City of Arvada

- City of Aurora
- Boulder County
- Douglas County
- City of Englewood
- City of Golden
- Media Visions, Inc.
- Neuton Lawn Mower Company
- Regional Transportation District
- rabble + rouser
- Suncor Energy (U.S.A.) Inc.
- Noble Energy

The RAQC would also like to thank the following organizations for their involvement in the 2009 “Let’s Take Care of our Summer Air” ozone education and outreach program.

- Andersen Recycles
- Banta Promotions
- Butler Rents
- CBS Outdoor
- Denver Center for the Performing Arts (DCPA)
- Clear Channel
- Colorado Public Radio
- Comcast Spotlight
- Denver Boulder Couriers
- Denver Newspaper Agency
- Denver Zoo
- Distinctive Tent Rentals
- E2 Business Gifts
- Entercom
- GSP Marketing
- Heinrich Marketing/Hispanidad
- KBCO 97.3 FM
- KCNC
- KDVR
- KMGH

- KUSA
- KWGN
- Mail Masters
- Neuton Lawn Mower Company
- Reach Local
- Red Door Printing
- Summit Graphics
- Turin Bicycles
- Unique Litho

OVERVIEW

The Regional Air Quality Council (RAQC) has concluded the 11th year of its Voluntary Ozone Reduction Program. The program built upon previous years with the continued implementation of an enhanced awareness, education, and outreach program entitled “Let’s Take Care of Our Summer Air.”

This comprehensive program was made possible with the help of numerous stakeholders from the Front Range region, including local, state and federal governments, businesses, transportation organizations, nonprofits and citizens. Its goal was to increase awareness and understanding of ozone pollution and voluntary activities to help reduce it throughout the region.

Ground-level ozone pollution is a summertime pollutant that occurs when volatile organic compounds (VOCs) and nitrogen oxides (NO_x) react in the presence of 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.

During the 2009 summer ozone season, the Front Range region stayed in compliance with the 8-hour standard set by the U.S. Environmental Protection Agency (EPA) in 2004 but failed to meet the 2008 standard. A violation occurred in 2007 and continued failure to meet the standard means that attention to the issue of ground-level ozone remains essential in the region including stakeholder action to address additional strategies. (see the “Standards and Status” section for more information).

It is imperative that the Denver-metropolitan area and Front Range region maintain and increase efforts to reduce ozone pollution to improve air quality and public health. In addition, it is important to ensure ozone levels are well below the standard for years to come as the U.S. Environmental Protection Agency (EPA) lowered the health-based standard in 2008 to .75 parts per billion (ppb) from the previous standard of .80 ppb. The EPA has also announced plans to reduce the standard even more in October of 2010. Keeping ozone levels well below the standard will help to reduce the amount of mandatory control measures that may have to be introduced in order to meet federal requirements (see the “Regulatory Plan” section for more information).

The Voluntary Ozone Reduction Program, named “Let’s Take Care of our Summer Air,” expanded efforts to include a large-scale public awareness campaign, aimed to reach as many people as possible to increase awareness and understanding

about ground-level ozone pollution. The program consisted of the following activities:

- A continuation of the Ozone Action Alert Program, designed to warn people in advance of the potential for elevated ozone levels and to encourage changes in ozone-forming activities;
- The implementation of a large-scale information, outreach, and education campaign that focused on simple actions people can do to reduce ground-level ozone;
- The utilization of television, radio, outdoor, web, and print advertising to educate citizens on simple tips to reduce ozone pollution;
- The continuation of a behavior-change campaign in which citizens were encouraged to take a pledge to avoid activities which contribute to ozone pollution;
- The implementation of a lawnmower exchange event, in partnership with Neuton;
- The redesign of the ozone-dedicated web site, OzoneAware.org, with information for local governments, citizens, businesses and media;
- The introduction of social media as a means to get out information about events and promotions;
- The AirWaves High School Radio Scholarship program to promote vehicle maintenance as a means to reduce ozone pollution, in partnership with Envirotec Systems, Corp.;
- Outreach to the North Front Range and surrounding areas;
- Participation in additional metro-area events such as Bike to Work Day and Earth Day

The 2009 program would not have been possible without the RAQC's financial partners, all of which contributed greatly to the campaign's efforts.

- Federal Highway Administration (FHWA), Colorado Department of Transportation, and Denver Regional Council of Governments (DRCOG) – Congestion Mitigation/Air Quality (CM/AQ) grant
- Envirotec Systems, Corp. (Air Care Colorado) – private contribution to develop the AirWaves High School Radio Scholarship Program and to assist with components of the Car Care Fairs
- Colorado Department of Public Health and Environment's (CDPHE) Supplemental Environmental Projects (SEP) program
- Suncor Energy Inc. – private contribution for advertising and Mow Down Pollution

Additional support was provided by American Lung Association of Colorado, and local governments throughout the metropolitan area and Front Range region.

Summary of Major Funding Sources

Source	Amount
CM/AQ	\$488,000
Envirotec	\$25,000
Suncor Energy	\$200,000
SEPs	\$34,000
TOTAL	\$747,000

STANDARDS AND STATUS

8-Hour Ozone Standard

The 8-hour ozone standard set in 2004 limits the allowable level of ozone to 0.08 parts per million (ppm) or 80 parts per billion (ppb) averaged over eight hours. The regional officially violated that standard in 2007 and 2008, but remained in compliance in 2009. A violation of the 8-hour

standard set in 2004 occurs when the three-year average of the 4th maximum concentration at any given monitor reaches or exceeds 0.085 ppm or 85 ppb.

In 2008, the EPA officially promulgated a new 8-hour standard in the March 27, 2008 federal register. The standard was lowered to 0.075 ppm or 75 ppb averaged over eight hours. While official designations for the new standard have yet to be made, it appears as though the Denver metropolitan region would be out of compliance with the new standard. In addition, the EPA plans to lower the standard again in October 2010 to a level between 60 and 70 ppb.

It is even more imperative now that the region makes every effort to bring ozone levels down along the Front Range. With new standards set to take place, regional partners must work together to craft a new state implementation plan (SIP) that will demonstrate compliance with the standard in 2013.

1-Hour Ozone 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 maintenance plan details strategies to keep the region in attainment of National Ambient Air Quality Standards (NAAQS) for ozone and also requests that the EPA redesignate the Denver-metropolitan area to attainment status for ozone.

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. The region has not violated the 1-hour standard since

1988.

REGULATORY PLAN

The State of Colorado was one of several states who submitted an Early Action Compact (EAC) for ozone to the EPA in 2004. Unfortunately, the Denver region failed to meet the requirements set forth in the EAC in 2007 and later that year the EPA announced it would not grant another extension date for Denver to meet the 8-hour health-based ground-level ozone standard. The result was a federal nonattainment designation for the Denver area.

In 2008, the RAQC worked with EPA, the Colorado Department of Public Health and Environment (CDPHE) and the Denver Regional Council of Governments (DRCOG) as well as numerous regional stakeholders to develop a new State Implementation Plan (SIP) that was accepted by the Air Quality Control Commission (AQCC) on December 12, 2008. The SIP then went to the legislature for approval before Governor Bill Ritter Jr. signed it in June 2009.

All regulatory documents have historically outlined a variety of mandatory strategies but do not include voluntary outreach and education components. The lack of a voluntary plan was one of the driving forces behind the creation of the RAQC's ozone outreach, education and behavior change campaign. It is vital that the RAQC continues its outreach efforts in order to raise awareness and understanding about ozone pollution.

NUMBERS

Even though the region has been designated as a nonattainment area, efforts to reduce ozone pollution in the future will continue to be a priority. It will be even more important that stakeholders find

ways to keep ozone levels low while the risk of violating the standard over the next few years is still a possibility. Ongoing ozone mitigation efforts will continue to be critical.

The basis for the federal 8-hour ozone standard is the 4th maximum concentration at any given monitor averaged over an 8-hour time period at each monitor. The EPA calculates the standard by averaging the 4th maximum concentration over three years. In 2009, the Rocky Flats North monitor recorded the highest value of the season at 86 ppb on August 22. This was followed by the Chatfield and the South Boulder Creek monitors, which recorded 85 ppb on August 5 and 84 ppb on August 22 respectively.

There were a total of 18 days that area monitors recorded values at or above 75 ppb during the 2009 season. The exceedances were split evenly between July and August – an atypical month for ozone formation. Most exceedances are typically found in July when temperatures are at their highest. When combined with the two previous years (2007 and 2008), the 4th maximum average at Rocky Flats is 82 ppb which was the highest three-year average across all monitors. Five other monitors recorded three year averages at or above 75 ppb including Chatfield State Park (78 ppb), S. Boulder Creek (78 ppb), Fort Collins West (78 ppb), NREL (77 ppb) and Highland (75 ppb). All values at monitors that meet or exceed the standard of 75 ppb indicate a violation of the federal standard. All other monitors maintained averages below the 75 ppb limit. The Denver region attained the 1996 standard of 85 ppb for which the last SIP was written.

Additional ozone monitoring data for the 2009 summer ozone season, as well as previous

seasons, is contained in tables in the Appendices section of this report.

VOLUNTARY PLAN

During the RAQC's numerous planning processes to address ozone in the Denver region it has remained a priority to maintain an on-going large-scale, comprehensive ozone outreach and education effort that utilized a multi-media approach in order to reach out to a diverse audience. The RAQC's previous efforts were successful in organizing stakeholders and reaching out to small groups. Due to lack of funding, however, it was not able to expand significantly on previous efforts until 2005. However, thanks to numerous grant opportunities and other significant financial partners, the RAQC was able to greatly expand its plans in 2005, an effort that has continued through 2009.

The RAQC, charged with developing a large-scale, comprehensive plan, made the decision to hire professional contractors to assist with this effort. With the assistance of the Ozone Outreach, Information, and Education Advisory Committee (Advisory Committee), the RAQC contracted with JohnstonWells Public Relations and Launch Advertising to assist with advertising and public relations activities. The RAQC also chose National Research Center, Inc. and the Howell Research Group to assist with research and evaluative activities in 2005 through 2007 – efforts that were crucial to the development and maintenance of the campaign. All four contractors worked closely with each other, the RAQC Board and staff, and the Advisory Committee to develop, implement and assess the comprehensive campaign.

The result of this multi-partner effort was a comprehensive, multi-media campaign that

successfully educated and raised awareness of ground-level ozone pollution by 12% over the course of three years, ending in 2007. Another official research assessment will occur in 2010 to measure the campaign's effectiveness. The specific components of the campaign are discussed in more detail below.

COMPONENTS

The 2009 "Let's Take Care of our Summer Air" education and outreach program included a myriad of components designed to reach out to citizens, local governments, nonprofits, businesses, and media. In addition, it included a multi-media paid advertising campaign covering television, outdoor, radio, print, and online components in order to maximize visibility. These various components, which are described in detail below, worked together to raise awareness throughout the Front Range region about the important issue of ozone pollution. The major components of the campaign were simultaneously launched June 1 and continued through August 31 to coincide with the start and the end of the summer ozone season.

1. Ozone Action Alerts

One of the longest standing programs of the RAQC's summertime efforts include Ozone Action Alerts, designed to warn citizens of the potential for elevated ozone levels and to encourage behavior change. The technical services staff of the Air Pollution Control Division (APCD) at CDPHE developed a system more than 10 years ago to forecast imminent meteorological conditions that support the development of ozone concentrations at or above 75 ppb, which are reported on an as-needed 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 at 4:00 p.m. the day they are called and 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 meteorological conditions were expected to increase ozone levels. The alerts were also displayed on Colorado Department of Transportation (CDOT) highway message boards throughout the metro area. Most local television stations made an effort to broadcast alerts as well as mention the alerts during various morning and evening weather broadcasts.

The RAQC posted ozone alerts to the web site so people visiting the site could also access the current air quality information. As in previous years, many local governments and nonprofit organizations placed a link on their web sites to display current air quality conditions.

By utilizing the templates from the outdoor boards posted around the metro-area, five alerts were used to raise awareness of the actions associated with an ozone alert. Each alert featured one of the actions that citizens can take to help reduce ozone on potentially high ozone days. The alerts included information on how ozone is formed, the health effects, important contact information, and information on the summer "chill" campaign a pledge program implemented as part of the 2009 program (see below for more detailed information on the summer "chill" campaign).

Results

The RAQC emailed the Ozone Action Alerts to nearly 400 local government representatives, media

outlets, businesses, and citizens, including several Spanish television media outlets. 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 also provided media with information to broadcast the potential for elevated ozone levels and to encourage changes in ozone-causing behaviors.

During the 2009 ozone season, a total of 11 alerts were issued including one in June, four in July, and five in August. Due to the forecast nature of the program, the number of alerts is not necessarily an indication of actual ozone levels above the federal standard.

2. Media Advertising

The RAQC continued the advertising campaign to raise awareness about ozone pollution developed by Launch Advertising in 2005 and updated in 2008. The campaign was based on simple actions citizens can take to help reduce ground-level ozone pollution. The RAQC and its advertising partners believe that through repetition of the media messages over the past several years that citizens have begun to internalize the behaviors associated with reducing ozone pollution.

The purchased advertising schedule utilized television, radio, web, and outdoor advertising methods in order to maximize awareness of the issue. In addition, the RAQC's multiple media partners donated bonus television and radio airtime, bus tails, and pump toppers, extending the campaigns reach.

The use of media was also utilized to publicize the

RAQC's public events and programs, including the AirWaves high school radio scholarship contest and Mow Down Pollution.

Results

The multi-media paid advertising campaign resulted in over 2,934 television and radio spots that ran for a six- to seven-week period, in addition to five outdoor billboards rotating at seven of the largest and most visible billboard locations in the metro area during a three-month period. A partnership with the Regional Transportation District allowed for a two-month campaign utilizing 25 large bus king billboards and a significant partnership with Suncor Energy (U.S.A.) Inc. resulted in nearly 300 bonus gasoline pump toppers. The total number of impressions across all paid media elements was over 54,154,496.

All media aspects, including the creative work, were developed simultaneously with the other components of the program to ensure continuity throughout the entire campaign. Results of the paid media advertising campaign are detailed in the Appendices section.

3. Media Relations

The RAQC worked with JohnstonWells Public Relations to change the focus of media efforts. More of an emphasis was put on social media this year than in years past. By educating those who we connected with via Facebook and Twitter of the significance of ozone pollution, the RAQC and its partners were able to make messaging more specific and targeted.

Although traditional media was not the main focus of the campaign, interviews with meteorologists from channels 2,4,9 and 31.

The key elements to media outreach for 2009 included reaching out to Denver metro area residents via Twitter and Facebook to establish more lasting relationships with people reached by our messaging. Because of the nature of online outreach via Facebook and Twitter, we were able to communicate with followers and fans daily, informing them of Ozone Action Alerts Days and events associated with the Ozone Aware program.

Results

By the end of ozone season, the Ozone Aware Twitter account, @ozoneaware had 425 followers. These people were exposed to the messaging of the Ozone Aware campaign daily.

By summer's end, the Ozone Aware fan page on Facebook had 81 fans, an average of 30 views a day and 20 new pledges.

Additionally, eight news stories about Ozone appeared online, along with two radio and three print newspaper stories. Four live interviews were conducted with channels 2, 4, 9, 31.

4. Public Outreach

Over the past four seasons, public outreach has been an element in educating citizens about ozone pollution. To enhance this effort the summer "chill" campaign was continued. Along with existing events, many public outreach measures were implemented to maximize exposure of the campaign and its essential messages as well as educate the citizens on this issue using a more one-on-one approach. A number of informational items armed with important information about ozone pollution were handed out at various public events. These items are detailed below and examples can be found in the Appendices section of this report.

a. Web site

The RAQC worked with Rabble & Rouser to redesign the OzoneAware.org website. Throughout the Co-Creation process, members of both teams worked together to build a user-friendly, informative web site.

The ozone-dedicated web site, OzoneAware.org, featured more than 20 pages of information in both English and Spanish about program news and updates, information on ground-level ozone pollution including a place for visitors to pledge to "Take Care of Our Summer Air", information on how ozone is formed and how citizens can prevent it. The site also included information about the RAQC and a point of contact for further questions about ozone.

Results

Overall, the web site proved to be a powerful communication tool with 2,897 unique visitors who spent an average of two minutes and 16 seconds on the site, and 4,143 total visits over the course of the 2008 3 month ozone season. There were 11,276 page visits throughout ozone season.

b. Informational Items

RAQC staff utilized a variety of promotional items to assist in delivering messages about ozone pollution to the public. Many items used the "chill" theme and colors to help encourage citizens to chill out and avoid ozone-causing behavior during the summer months. Other materials included the "Let's Take Care of Our Summer Air" tagline.

Results

RAQC staff distributed nearly 6,000 educational pieces of literature or giveaways at events and meetings in which they participated, raising

awareness and understanding about ozone pollution. These items included:

- **Pledge/Tip cards:** The two-sided card served as both a pledge card for the “chill” campaign as well as an informational tip card. The side-by-side perforated card asked citizens to “pledge to chill” to reduce ozone-causing behaviors on one side while the other side served as a tear-away tip card the individual could keep. The cards were distributed at all public events for which RAQC had a presence as well as by the Clean Air Crew.
- **Stickers:** Two stickers, containing “I breathe, therefore I care” and “Don’t just breathe, do something” and the “Let’s Take Care of our Summer Air” tagline and web address, were distributed at all events by staff and the Clean Air Crew.
- **Reusable Bags:** Blue OzoneAware.org reusable bags were distributed at Civic Center Park on Bike to Work Day.

d. Summer “Chill” Campaign

As a means to encourage citizens to change their behavior in favor of ozone reduction, the RAQC and its partners continued the summer “chill” campaign. The campaign used simple messages and an online and print pledge to encourage awareness and action. The “chill” concept stems from asking people to avoid mowing the lawn, painting the deck, running errands, etc. on hot summer days. Instead, people were encouraged to chill out and read a book in the park or take a walk to the local movie theater. People not only escaped the summer heat, but helped reduce ozone pollution.

Web pages (<http://pledge.OzoneAware.org>) were added to the existing web site at OzoneAware.org to accommodate an online pledge system where

citizens voluntarily pledged to reduce one or more activities, such as drive less and mow after 5 p.m. Visitors to the web site were also able to see the names of others who pledged and the corresponding action chosen. In addition to the online pledge system, a number of pledges were handed out in print form at community events. The print pledges had an attached tip card that the pledgees could take with them after signing a pledge.

Results

By the end of the summer, 500 pledges were obtained at community events and an additional 100 people pledged online.

e. Mow Down Pollution

The RAQC partnered with Neuton Lawn Mower Company to host “Mow Down Pollution” in Denver, Commerce City and Longmont in the spring. As part of the “Let’s Take Care of our Summer Air” outreach campaign, the event gathered citizens together to permanently recycle old gasoline-powered lawn equipment in exchange for significant discounts on low-emissions alternatives. Citizens were offered a discount of nearly \$150 on Neuton’s cordless rechargeable lawnmower. Only residents of Weld County were permitted to participate in the event. This program was made possible by funding provided by Suncor and the Colorado Department of Health and Environment.

Results

Denver

The RAQC and its partners permanently prevented 17,851 pounds of VOCs from entering Denver’s air by recycling 367 pieces of gasoline-powered lawn equipment at the event. In addition, the RAQC and its partners sold a total of 594 battery-operated lawn mowers. Here is the breakout by even location:

Commerce City

A total of 97 mowers were recycled and 154 new, battery-operated mowers were sold.

Longmont

A total of 71 mowers were recycled and 122 new, battery-operated mowers were sold.

Denver

A total of 199 mowers were recycled and 318 new, battery-operated mowers were sold.

g. AirWaves High School Radio Scholarship Program

The RAQC, Envirotest Systems, Corp. (Air Care Colorado), and 97.3 KBCO FM again partnered to implement the AirWaves contest to provide local high school students the opportunity to write and record their own air quality public service announcement (PSA) to be broadcast on a major radio station in the metro area.

Students in grades 9-12 were asked to submit a 30-second PSA relating vehicle maintenance to air quality and public health. A selection committee reviewed the entries from the Denver-metro area and chose two PSAs that most closely fit the tone of this year's ozone outreach campaign. The winning students were afforded the opportunity to visit the KBCO studios to record their winning PSAs professionally in preparation for a seven-week long run on the air.

Results

Posters were distributed to public and private high schools throughout the entire Front Range region to announce and advertise the scholarship program. The selection committee had several finalists to choose from before selecting winners. The two students responsible for producing the two winning

PSAs were awarded a college scholarship in the amount of \$1,500 per entry as well as the opportunity to be recognized by family and peers on local radio station 97.3 KBCO FM and Spanish-language station 95.7 KMGG throughout the entire Denver-metropolitan region. In addition, both schools received a \$500 environmental scholarship. The finished, produced spots played during morning and afternoon drive time for six weeks between June and mid-July during the 2009 Ozone Season.

h. Bike to Work Day

In June, the RAQC participated in the annual Bike to Work Day, sponsored by the Denver Regional Council of Governments' (DRCOG) to help raise awareness of summer ozone. RAQC staff hosted a booth in Civic Center Park to hand out branded, reusable bags. The bags included the tagline, logo, and the ozone web site – OzoneAware.org. Many local news channels attended the event as well as over 20,000 participants, including the Mayor of Denver, John Hickenlooper and Governor Bill Ritter.

Results

The RAQC handed out more than 1,000 reusable bags. Denver Mayor John Hickenlooper participated in the event as well as several of the local television stations that aired clips from Bike to Work Day.

i. Gas cap testing program

The RAQC worked with several local governments fleet managers to test the gas caps of fleet vehicles and replace faulty caps.

Results

Fleet managers sent the results of the tests to RAQC staff, along with the invoices for replacement caps.

5. Local Government and Front Range Outreach

The local governments throughout the Denver-metropolitan area have been among the RAQC's most significant partners in its ozone reduction efforts. Over the past ten years, local government staff has worked to make operational changes in public works and fleet maintenance divisions as well as educate staff and communities about ground-level ozone pollution. In addition, the RAQC worked with the North Front Range to coordinate outreach and education efforts.

Given the regional nature of air quality, ground-level ozone pollution remains a priority not just for the Denver-metro area, but to the entire Front Range region. The RAQC has been working with Front Range local governments and planning organizations for several years and have increased efforts to further coordinate ozone outreach and information campaigns. All of the materials from the "Let's Take Care of our Summer Air" program, including the logo, tagline, graphics, Ozone Action Alert templates, advertising materials, and other campaign materials, were made available to all Front Range cities for replication, and some hard copies were made available to those who requested. The past two years, in particular, the City of Fort Collins has made a great effort to incorporate these materials in a number of ways to ensure a consistent message with the Denver region.

The Mow Down Pollution program also provided a great opportunity to distribute information on ground level ozone pollution. At the events, everyone who purchased or recycled a lawn mower was given information and tip and pledge cards.

Further, Ozone Detector Cards were made available to Local Governments along the Front Range.

SUMMARY

The Voluntary Ozone Reduction Program complemented and expanded on the efforts of the previous nine years. By securing additional funding, the RAQC was able to successfully develop and implement a large-scale advertising, outreach and behavior change campaign to complement the strategies outlined in the regulatory plans designed to reduce ground-level ozone pollution.

The RAQC worked with local governments, businesses, nonprofit organizations, transportation management organizations, employee transportation networks, citizens and other concerned and interested groups. The greater visibility allowed the RAQC to leverage a large amount of bonus media throughout the duration of the campaign which also helped to increase awareness in the area. The RAQC was able to reach a larger audience than ever before through the use of a multi-media approach utilizing television, radio, print, public events, media outreach and a prominent online presence. This helped deliver a consistent message to audiences across the Front Range Region.

Unfortunately, the region violated the federal ozone standard again, despite great efforts among all stakeholders. The RAQC has hopes to expand on the current base of knowledge in the region and expand the efforts to keep ozone well below the designated limit in future years.

FUTURE PLANS

Building on the efforts of the 2009 campaign, the RAQC and its partners plan to continue education and outreach efforts to local governments, businesses, and citizens. The 2010 campaign will focus on changing behavior through education and

awareness with an increased emphasis on online media. Specifically, the campaign will include the following components:

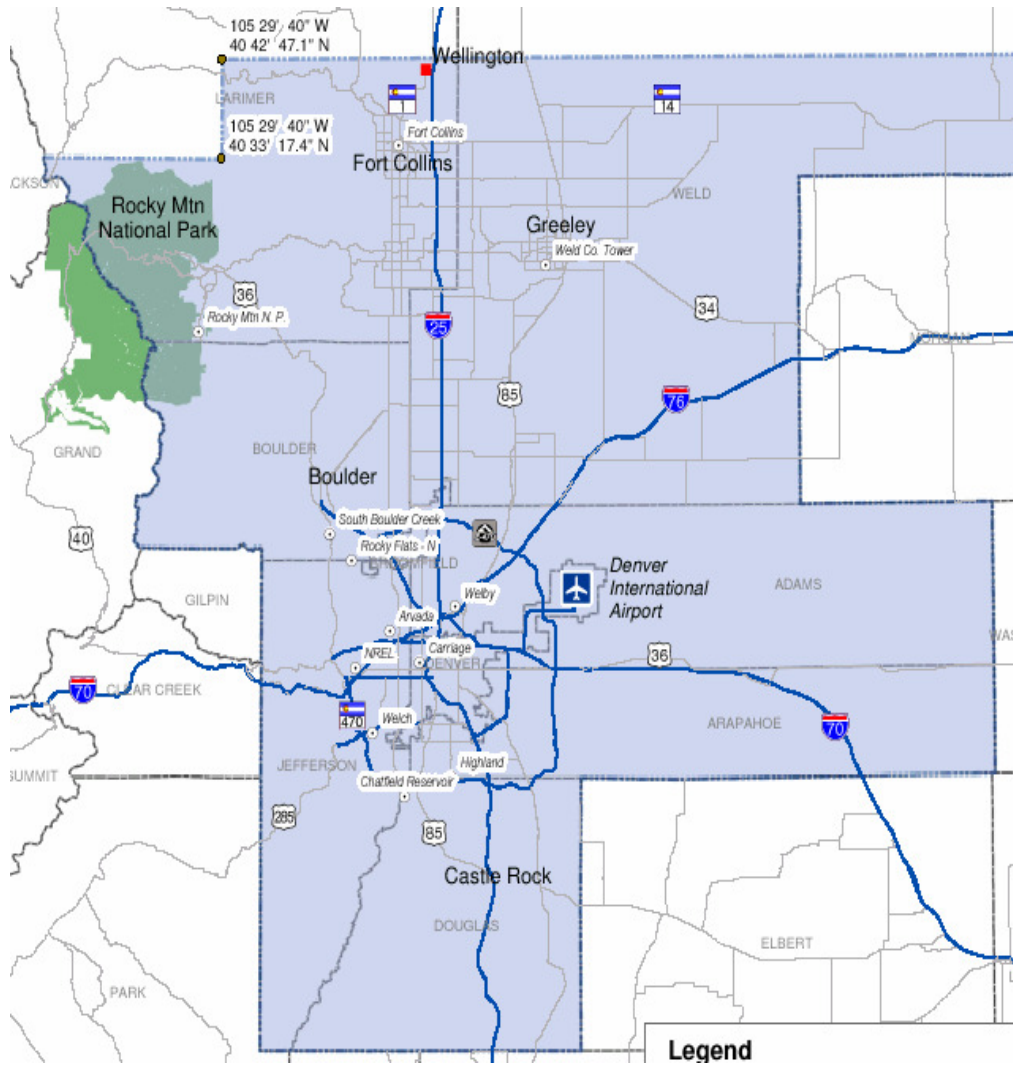
- Citizen Outreach
 - Ozone Action Alert program
 - AirWaves High School Radio Scholarship Program
 - Updated dedicated web site:
OzoneAware.org
 - Community events, such as Bike to Work Day and Ridesmart *Thursdays*
 - Initiated social media communications
- Local Government Outreach
 - Revitalization of fleet gas cap testing
 - Outreach to staff and council
 - Sustainability plan coordination
- Media Advertising and Outreach
 - Continuation of paid advertising campaign
 - Continuation of media outreach campaign
 - Expansion and dissemination of a local government guide

The RAQC looks forward to continuing to work with all of its partners on future years of a successful ozone outreach, education and behavior change campaign. For more information, contact Sarah Anderson at sanderson@raqc.org or (303) 629-5450, ext. 220 or visit OzoneAware.org.

DATA APPENDICES

APPENDIX ONE:

MAP OF THE METROPOLITAN-DENVER
OZONE ATTAINMENT/MAINTENANCE AREA AND MONITORING SITES



APPENDIX TWO:**AQI/YSI SYSTEM REPORTING SITES FOR OZONE
DENVER-METROPOLITAN AND FRONT RANGE REGIONS**

Site Name	Abbreviation	Location
Arvada	ARV	9101 W. 57 th & Garrison)
Aurora East	AURE	36001 E. Quincy Ave.
Aspen Park	ASP	26137 Conifer Rd.
Carriage	CRG	23 rd Avenue & Julian Street
Chatfield Reservoir	CHAT	11500 N. Roxborough Park Rd.
Colorado Springs	ACAD	Road 640, USAF Academy
Denver	CAMP	2105 Broadway
Denver Municipal Animal Shelter	DMAS	678 S. Jason
Ft. Collins	FTC	708 S. Mason St.
Ft. Collins West	FTCW	LaPorte Avenue & Overland Tr.
Fort Collins Rist Canyon	FTCR	11822 Rist Canyon Road
Greeley Tower	GRET	3101 35 th Ave.
Highlands *	HLD	8100 S. University Blvd.
Manitou Springs	MAN	401 El Monte Place
National Renewable Energy Laboratories	NREL	20 th Avenue & Quaker Street
Rocky Flats North	RFN	16600 W. Highway 128
South Boulder Creek	SBC	1405 1/2 S. Foothills Highway
Welby	WBY	3174 E. 78 th Ave (78 th Ave. & Steele St.)
Welch	WCH	124000 W. Highway 285

APPENDIX THREE:
OZONE ACTION ALERTS
2000 – 2009

	June	July	August	Total
2000	3	15	9	27
2001	1	8	4	13
2002	10	10	0	20
2003	2	25	15	42
2004	3	8	3	14
2005	3	19	1	23
2006	22	24	3	49
2007	14	26	4	44
2008	12	21	6	31
2009	1	4	6	11
Average per month	7	16	5.1	27.4

APPENDIX FOUR:**OZONE MONITORING DATA (PPB)
SELECT CDPHE MONITORING SITES**2009 4th Maximum Ozone Values (ppb) through September 30,
2009

Monitor	2009			2009	2008	2007	2007-09	2010
								97 Standard of .085
	1st	2nd	3rd	4th	4th	4th	Ave.	4th Allowable
	Max	Max	Max	Max	Max	Max		Max.
Welby	23-Aug 78	10-Jul 77	11-Aug 75	5-Aug 72	13-Jul 76	15-Jun 70	73	103
Highland*	5-Aug 79	18-Jul 77	6-Jul 69	10-Jul 69		31-Jul 75	75	
So. Bld Ck	22-Aug 84	10-Jul 79	15-Jul 74	24-Jun 73	31-May 76	20-Jul 85	78	105
Carriage	28-Jun 68	10-Jul 67	11-Aug 66	18-Jul 63	27-Jul 72	29-Jun 76	70	119
Chatfield S.P.	5-Aug 85	10-Jul 78	18-Jul 78	12-May 71	20-Jun 80	21-Jul 82	77	103
Arvada	10-Jul 78	5-Aug 74	28-Jun 70	11-Aug 70	15-Jul 74	20-Jul 79	74	110
Welch	18-Jul 78	5-Aug 74	10-Jul 71	15-Jul 70	19-Aug 73	2-Jul 80	74	111
RFN	22-Aug 86	10-Jul 85	15-Jul 85	5-Aug 79	15-Jul 79	30-Jun 90	82	96
NREL	10-Jul 81	5-Aug 76	22-Aug 71	18-Jul 70	18-Jul 76	25-Aug 85	77	108
Greeley Tr.	11-Aug 71	12-Aug 70	22-Aug 70	19-Jun 67	1-Aug 73	30-Jun 74	71	114
Fort Collins	22-Aug 74	13-May 69	25-Jun 62	8-Jul 61	31-May 76	24-Jun 69	68	117
RMNP**	19-Jun 75	7-Aug 70	13-May 68	5-Aug 68	31-May 76	30-Jul 78	74	
Fort Collins W.	22-Aug 82	11-Aug 74	13-May 73	8-Jul 73	24-Jul 77	30-Jul 85	78	104
DMAS	18-Jul 70	5-Aug 67	15-Jul 64	11-Aug 62	15-Jul 70	***	***	122
FTCR	21-Aug 71	19-Jun 69	22-Jun 69	13-Aug 67	***	***	***	
ASP	10-Jul 77	5-Aug 76	16-Jul 67	17-Jul 67	***	***	***	
AURE	1-Sep 79	18-Jul 68	12-Aug 67	10-Jul 66	***	***	***	

APPENDIX FIVE:

**10 YEARS OF 8-HOUR OZONE LEVELS
4TH HIGHEST MAXIMUM LEVELS (PPB)
SELECT CDPHE MONITORING SITES**

MONITOR	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
	4 th Max	4 th Max	4 th Max	4 th Max	4 th Max	4 th Max	4 th Max	4 th Max	4 th Max	4 th Max	4 th Max
NREL	80	83	81	81	95	74	79	83	85	76	70
RFN	81	81	82	88	91	72	77	90	90	79	79
CHAT	76	80	77	83	95	74	83	86	82	80	71
HLD	75	76	77	76	91	72	79	81	75	N/A	69
ARV	72	76	74	73	83	65	78	81	79	74	70
CRG	68	71	72	73	85	66	74	72	76	72	63
SBC	75	72	71	78	82	68	76	82	85	76	73
WCH	66	68	64	69	77	62	64	81	80	73	70
WBY	71	62	64	68	66	66	73	69	70	76	72

NOTE: Values shown in bold reflect recordings at or above 85 ppb.

APPENDIX SIX:
PAID MEDIA ADVERTISING CAMPAIGN
JUNE – AUGUST 2009

	Description	Paid Media	Bonus Media	Total
Television	:30 animated spots – one focused on lawn care, other on car care, one on alerts and the last on health (6-week run)	795	843*	1,638
Radio	:10 and :15 traffic tags read by live announcers during radio traffic reports (5-week run), :30 AirWaves ads (6-week run), & :60 spot to target female caregivers (5-week run)	626	346**	955
Outdoor	5 billboards, all with different messages, that rotated at 7 locations (3-months run)	4	3	7
Transit	25 bus boards promoting the use of public transit, donated by RTD (9-week run)	---	25	25
Pump Toppers	300 signs on the tops of gasoline pumps, donated by Suncor Energy (1-month run)	---	300	300
Online	Online spots were purchased through Reach Local, a company that places ads on web sites based on geographic region and interest level.	1.8 million	---	1,800,000

*TV bonus coverage also included website banners at no charge on websites for KUSA, KMGH, KDVR.

** Radio bonus spots include 110 :30 spots run on streaming website for KIMN.

APPENDIX SEVEN:

KNOWN MEDIA COVERAGE APRIL – SEPTEMBER 2009

Radio

- **99.5FM The Mountain** Robbie Knight's Green Report: Greener mowing and new mower coupons, *June 16, 2009*
- **850KOA AM** – First Ozone aware day, *June 1, 2009*

Print

- **Denver Post/ DenverPost.com** – Fifth Alert Raised on Colorado Air Quality, *July 23, 2009*
- **Denver Post/ DenverPost.com** – Winds are Changing for Ozone Standards, *July 8, 2009*
- **Boulder Daily Camera** – Reducing Summer Ozone Pollution, *July 8, 2009*

Television

Secured on air interviews or meteorologist interviews with the following stations:

- KUSA Channel 9
- KDVR Channel 31
- KCNC Channel 4
- KWGN Channel 2

Four local news sites posted the Air Quality report on their websites

Online

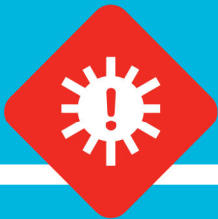
- **Our Parker Colorado Online** - Free Day at the Zoo - Lions, Tigers & Air - Oh My! *June 3, 2009*
- **Mile High Mamas Online** - Take Ozone Aware's Pledge to Chill with your Family This Summer, *June 6, 2009*
- **Denver 1 Thing** – Summer Ozone, *June 12, 2009*
- **Denver 1 Thing** – Mow Green, *July 4, 2009*
- **Daily Camera Online** - Free Day at the Zoo - Lions, Tigers & Air - Oh My! *June 4, 2009*
- **Daily Camera Online** - Green life: Mowing more responsibly, *May 12, 2009*
- **Colorado Department of Public Health and Environment online** - Air Pollution Control Division Air Quality Advisory, *July 17, 2009 – August 10, 2009 & August 17, 2009*
- **The Coloradoan.com** – Lawn care company keep pollution in mind, *June 15, 2009*
- **Boulder County Government Online** – Mow Down Pollution!! *June 1, 2009*

- **36 Commuting Solutions online** – Mow Down Pollution with the Regional Air Quality Council, *June 21, 2009*
- **YourHub.com** – Mow down pollution with a Green Tech solution, *April 14 ,2009*
- Twitter = **429** Followers with **575** Tweets
- Facebook = **82** fans

CREATIVE APPENDICES

APPENDIX ONE:

TAGLINE AND GOOD/BAD OZONE ICONS



LET'S TAKE CARE OF OUR SUMMER AIR.

OzoneAware.org



APPENDIX TWO: WEB SITE: OZONEAWARE.ORG

The screenshot shows the OzoneAware.org website in a Mozilla Firefox browser. The browser's address bar displays the URL <http://www.ozoneaware.org/>. The website's navigation menu includes links for "WHAT IS GROUND LEVEL OZONE?", "OZONE ACTION ALERTS", "PREVENTING OZONE", and "NEWS AND UPDATES".

The main content area features the OzoneAware logo with the tagline "LET'S TAKE CARE OF OUR SUMMER AIR". A large blue banner reads "IF YOU BREATHE THE AIR THIS ALERT'S FOR YOU." and includes the text "Sign up now to receive Ozone Action Alerts." with a "FIND OUT MORE!" button. Below the banner is a pagination control with "BACK", "1", "2", "3", "4", "5", and "NEXT" buttons.

On the right side, there is a "FRONT RANGE AIR QUALITY" widget showing: Expected: MODERATE, Current: MODERATE, and Visibility: GOOD. Below this is a search bar and a "NEWS AND UPDATES" section with the following items:

- 2008 Ozone SIP Approved by EPA
- 4th Maximum Ozone Values Table (ppb) through August 15, 2010
- 2010 Video Contest deadline extended!

There is a "SEE ALL NEWS" button. Below the news section are links for "FOR OUR STAKEHOLDERS", "MEDIA ROOM", and "LEARN MORE ABOUT RAQC". At the bottom of the page, there are two buttons: "BE OZONE AWARE" and "JOIN OUR CLEAN AIR COMMUNITY".

The browser's taskbar at the bottom shows several open applications: Start, Microsoft Outlook, OzoneAware - Home, 2009 Season, VOC Reductions 081810, RE: Emissions Budget Qu..., Summer Ozone Alerts, Ozone Report 2009 - Mic..., and the system clock showing 4:26 PM.

**APPENDIX THREE:
OUTDOOR BILLBOARDS**

TIGHTEN YOUR GAS CAP.



LET'S TAKE CARE OF OUR SUMMER AIR.
OzoneAware.org

MOW IN THE EVENING.



LET'S TAKE CARE OF OUR SUMMER AIR.
OzoneAware.org

CHECK YOUR TIRE PRESSURE.



LET'S TAKE CARE OF OUR SUMMER AIR.
OzoneAware.org

TUNE UP YOUR CAR.



LET'S TAKE CARE OF OUR SUMMER AIR.
OzoneAware.org

REFUEL IN THE EVENING.



LET'S TAKE CARE OF OUR SUMMER AIR.
OzoneAware.org

APPENDIX FOUR:**OZONE ACTION ALERT TEMPLATE****OZONE ACTION ALERT:**

THE REGIONAL AIR QUALITY COUNCIL AND THE COLO. DEPT. OF PUBLIC HEALTH AND ENVIRONMENT HAVE ISSUED AN ALERT FOR THE METRO-DENVER AND FRONT RANGE REGION. HOT TEMPERATURES, CLEAR SUMMER SKIES, AND LIGHT-TO-MODERATE WINDS MAY LEAD TO INCREASED GROUND-LEVEL OZONE THROUGHOUT THE REGION. THIS OZONE ACTION ALERT IS IN EFFECT UNTIL 4:00 P.M. TOMORROW.

SO WHAT'S THE DIRT ON OZONE?

Ground level ozone pollution is created when emissions from everyday items – such as gasoline-powered vehicles and lawn equipment, and household paints, stains and solvents – combine with other pollutants in the atmosphere on hot, summer days.

IT CAN AFFECT YOU.

At ground level, ozone pollution is harmful to all of us, especially the young and elderly. Ozone can also trigger attacks and symptoms in individuals with pre-existing health conditions, such as asthma or other respiratory infections.

High levels of ozone pollution often affect healthy people who work or exercise outdoors and can cause breathing difficulties, eye irritation and reduced resistance to lung infections and colds with exposure for prolonged periods.

CHILL OUT AND BREATHE EASY.

The fewer ozone-causing emissions you produce on hot, still, summer days, the better. Reduce pollution by doing these simple things:

- > Keep your car well maintained
- > Refuel in the evening on hot sunny days
- > Stop at the click – don't overfill gas tank
- > Mow in the evening on hot sunny days
- > Tighten gas cap after refueling

**FOR MORE INFORMATION:**

24-Hour Air Quality Hotline: 303.758.4848
 Media Inquiries: 303.540.1887 (pager)
 Ozone Aware: www.OzoneAware.org
 RAQC: 303.629.5450 or www.raqc.org
 CDPHE: 303.692.3100

TIGHTEN YOUR GAS CAP.**LET'S TAKE CARE OF OUR SUMMER AIR.**OzoneAware.org

APPENDIX FIVE:

OUTREACH STICKERS AND TIP CARD



SO WHAT'S THE DIRT ON OZONE POLLUTION?

Ground level ozone pollution is created when emissions from everyday items such as gasoline-powered vehicles and lawn equipment, and household paints, stains and solvents, combine with other pollutants in the atmosphere on hot, summer days. Ground level ozone is harmful to our health and environment. We can reduce our Ozone Alert days by working together. Check out the simple actions you can take on the back of this card.



LET'S TAKE CARE OF OUR SUMMER AIR.
OzoneAware.org

(front)

THINK BEFORE YOU START.

Ground Level Ozone Pollution can be reduced when you do these simple things:

- > keep your car well maintained
- > refuel after 5 p.m. on hot sunny days
- > stop at the click – don't overfill gas tanks
- > walk to lunch and run errands after work
- > take the bus at least once a week
- > use gas-powered lawn equipment after 5 p.m. on hot, sunny days
- > avoid painting and staining projects in the heat of the day
- > tightly cap solvents; store in a cool place

(back)

APPENDIX SIX:

“CHILL” PLEDGE CARD AND LOGO

PLEDGE TO CHILL.

Join the non-movement. Pledge to do less on hot summer days.

Check the activities you'll commit to and mail back or register with us online at OzoneAware.org.

- drive less, walk to lunch, run errands after work
- refuel your car after 5 p.m. and stop at the click
- mow after 5 p.m. on hot summer days

Name _____ Email _____

Street Address _____ City/State/Zip _____

- I would like my name to appear on your web site's pledge page.

The Regional Air Quality Council does not sell or give away personal information from the information you provide. It is used solely for the purposes of sending you ozone updates and special offers.



Regional Air Quality Council
1445 Market Street, Suite 260
Denver, CO 80202

SO WHAT'S THE DIRT ON OZONE POLLUTION?

Ground level ozone pollution is created when emissions from everyday items such as gasoline-powered vehicles and lawn equipment, and household paints, stains and solvents, combine with other pollutants in the atmosphere on hot, summer days. Ground level ozone is harmful to our health and environment. We can reduce our Ozone Alert days by working together. Take the pledge this summer to help take care of our summer air.



LET'S TAKE CARE OF OUR SUMMER AIR.
OzoneAware.org

THINK BEFORE YOU START.

Ground Level Ozone Pollution can be reduced when you do these simple things:

- > keep your car well maintained
- > refuel after 5 p.m. on hot sunny days
- > stop at the click - don't overfill gas tanks
- > walk to lunch and run errands after work
- > take the bus at least once a week
- > use gas-powered lawn equipment after 5 p.m. on hot, sunny days
- > avoid painting and staining projects in the heat of the day
- > tightly cap solvents; store in a cool place

APPENDIX SEVEN: ONLINE "CHILL" PLEDGE

The screenshot shows a Mozilla Firefox browser window displaying the OzoneAware website. The address bar shows the URL http://www.ozoneaware.org/home/pledge_form. The website has a navigation menu with links: WHAT IS GROUND LEVEL OZONE?, OZONE ACTION ALERTS, PREVENTING OZONE, and NEWS AND UPDATES. The main content area features the OzoneAware logo with the tagline "LET'S TAKE CARE OF OUR SUMMER AIR".

TAKE THE PLEDGE

Join our Clean Air Community

Form fields:

- First & Last Name:
- Email Address:

Commitment options:

- I'll commit to 1+ Actions this summer and become a Clean Air Member
- I'll commit to 3+ Actions this summer and become a Clean Air Champion
- I'll commit to 5+ Actions this summer and become a Clean Air Advocate. As a Clean Air Advocate, I'll also invite my friends to join the cause

Buttons: I'M READY TO PLEDGE! SHOW ME WHO'S PLEDGED

Illustration of diverse people's faces.

Here are the easy Clean Air Actions you can take to reduce Ground Level Ozone Pollution:

- > Drive less
- > Walk to lunch
- > Run errands after work
- > Keep your car well maintained
- > Avoid unnecessary idling
- > Take mass transit or ride your bike instead

Footer text: Be sure to check back in the coming weeks for a list of Chill Zones and partners and the latest Summer Chill news! Thank you to all of our "chill" partners for encouraging all of us to stay cool this summer!