

2013 REPORT

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OzoneAware

LET'S TAKE CARE OF OUR SUMMER AIR

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2013 OZONE REPORT

ACKNOWLEDGEMENTS

The Regional Air Quality Council (RAQC) would like to thank the following organizations, all of which provided generous funding and support to make the 2013 OzoneAware program possible:

- Federal Highway Administration (FHWA), Colorado Department of Transportation (CDOT), and Denver Regional Council of Governments (DRCOG) – Congestion Mitigation/Air Quality (CM/AQ) grant;
- Envirotest Systems, Corp. (Air Care Colorado) – private contribution to implement a gas cap replacement program in partnership with NAPA Auto Parts for residents whose vehicles failed emissions testing due to a faulty gas cap, and private contributions to provide media placement and prizes for a youth poster contest;
- Suncor Energy Inc. and Black and Decker – private contributions for Mow Down Pollution;
- Local governments throughout the metropolitan area and Front Range region.

Summary of Major Funding Sources

Source	Amount
CMAQ	\$861,215
Envirotest (In-Kind Contribution)	\$70,000
Suncor Energy	\$45,000
RAQC	\$45,000
TOTAL	\$1,016,215

The RAQC would also like to thank the following partners and supporters for their significant contributions to the success of the 2013 OzoneAware campaign.

- American Lung Association of Colorado
- Azteca
- B-Cycle
- BikeDenver
- Black and Decker
- CBS Outdoor
- Civic Center Conservancy
- Colorado Department of Public Health and Environment, Air Pollution Control Division
- Colorado Department of Transportation
- Colorado Public Radio
- Cycleton
- Denver Parent
- Denver Regional Council of Governments – Way to Go Program
- Engines Off Colorado
- Envirotest Systems, Corp. (Air Care Colorado)
- Greenway Foundation
- Hunter Douglas
- KMGH
- Lamar Outdoor Advertising
- Launch Advertising
- Media Visions, Inc.
- NAPA Auto Parts
- National Jewish Medical and Research Center
- PBS
- Rabble and Rouser
- Regional Transportation District
- SE2 Communications
- Total Traffic Radio
- Walk Denver
- WideFoc.Us

EXECUTIVE SUMMARY

OzoneAware is a RAQC-sponsored outreach and education program with a two-fold mission: 1. to increase public awareness about ozone pollution and its causes and health effects and 2. to motivate area residents to change their behaviors to help reduce ozone pollution. The campaign is made possible with the help of numerous stakeholders from the Denver Metro/Front Range region -- including local, state and federal governments; businesses; transportation organizations; nonprofits; and citizens.

Ground-level ozone pollution is a summertime pollutant that forms when emissions from everyday sources such as local industry; gasoline-powered vehicles and lawn equipment; and household paints, stains, and solvents react in the presence of heat and sunlight. Ozone pollution can cause breathing difficulties -- particularly in children, the elderly, and people with pre-existing respiratory conditions -- and even healthy people who exercise or work outdoors may experience breathing problems and eye irritation when exposed to elevated levels.

The Denver Metro/Front Range Region has been out of compliance with U.S. Environmental Protection Agency (EPA) standards for ground-level ozone since 2007. The area has until 2015 to meet the standard of 75 parts per billion (ppb) or face federally mandated planning requirements. Ongoing public information efforts to encourage voluntary ozone reduction are therefore imperative both to improving air quality and public health and to getting the area back into compliance.

With the close of the 2013 OzoneAware ozone season, the RAQC has concluded the ninth year of its OzoneAware program and 15th year of its

Voluntary Ozone Reduction Program. The 2013 OzoneAware program built upon the successful outreach elements developed and implemented in previous years with a refreshed approach to messaging and citizen engagement. To that end, OzoneAware continued to encourage ozone-reducing behaviors through tip-based messaging while also introducing elements to engender a personal connection to the issue and emphasize how individuals can make a difference.

The 2013 OzoneAware program included:

- Introduction of messaging that informs the public that most ozone pollution comes from the direct actions of people -- especially people using their cars; mowers; and paints, stains and solvents -- and that their actions make a difference;
- Implementation of a new paid media program that targets young professionals, empty nesters and Hispanic commuters through the use of updated TV (KMGH and PBS), radio (Colorado Public Radio/V-Me and Total Traffic), B-Cycle and outdoor advertisements;
- Initiation of an exclusive media agreement with KMGH and spokespersons from KMGH/Azteca -- Mike Nelson and Antonio Sanchez, among other Channel 7 meteorologists -- to reinforce messaging on TV, in schools and at community events;
- Development of an online/mobile engagement tool -- the OzoMeter -- that allows metro residents and participants of the Every Trip Counts and OzoneAware Programs to track their ozone reduction behaviors and see for themselves how their individual actions impact our air quality;
- Creation of an activity book for kids and subsequent dissemination of the book in schools

and at outreach events by Channel 7 meteorologists and the OzoneAware Team;

- Rotation of 7' x 3' informational displays at 80 community center locations;
- 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;
- Continued implementation of a large-scale information, outreach and education campaign that focused on simple actions people can take to reduce ground-level ozone;
- Continuation of a behavior-change campaign in which citizens were encouraged to take a pledge to avoid activities which contribute to ozone pollution;
- Establishment of a "Clean Air Heroes" program celebrating the participants who track the most ozone reduction;
- Continuation of a lawnmower exchange event, in partnership with Black and Decker;
- Introduction of the "Get In It To Win It" incentive program, which entered Clean Air Community members into prize drawings each week based on a monthly theme;
- An update of the Hispanic section of the OzoneAware web site, and acquisition of Hispanic-specific URL:
<http://www.concienciaozono.com>;
- Increased, focused social media efforts, including the development and implementation of a social media calendar and Facebook ad placements;
- Participation in numerous metro-area events, such as Bike to Work Day and Viva Streets;
- Partnership with Envirotest -- Air Care Colorado, the Colorado Department of Public Health and Environment (CDPHE) and NAPA Auto Parts on

a gas cap replacement program for residents failing emissions tests due to faulty gas caps;

- Partnership with Envirotest -- Air Care Colorado, CDPHE, and other air quality partners on a poster contest for kids in grades 1-8, which was publicized on local and Disney radio stations as well as via direct outreach to educators.

FEDERAL OZONE STANDARDS:

COMPLIANCE AND OUTLOOK

The Environmental Protection Agency (EPA) is responsible for establishing and periodically updating federal public health standards, including the standard for ozone. The EPA relies on an independent team of expert scientists known as the Clean Air Science Advisory Committee (CASAC) for advice in setting the appropriate health-based air quality standards. The current eight-hour ozone standard limits the allowable level of ozone to 75 parts per billion (ppb) or .075 parts per million (ppm) averaged over three years.

The State of Colorado was among several states submitting an Early Action Compact (EAC) – a state-devised approach for meeting the former ozone standard of 85 ppb/.085 ppm -- to the EPA in 2004. Unfortunately, in 2007, the Denver region failed to meet the requirements set forth in the EAC. That year, the EPA announced it would not grant another extension date for Denver to meet the eight-hour health-based ground-level ozone standard. The result was the first federal nonattainment designation for the Denver area and the subsequent need for a State Implementation Plan (SIP) to recommend concrete strategies to facilitate the area's compliance.

In 2008, the RAQC worked with EPA, CDPHE and the Denver Regional Council of Governments

(DRCOG), as well as numerous regional stakeholders, to develop a SIP that was accepted by the Air Quality Control Commission (AQCC) on December 12, 2008. The SIP was vetted through the legislature for approval before it was signed by Governor Bill Ritter Jr. in June 2009. The SIP includes a number of recommended regulatory and policy strategies, the impacts of which OzoneAware campaign functions to augment.

The Denver Metro/Front Range region has continued to fall out of compliance with federal standards for ozone since 2007. On April 30, 2012, the EPA officially issued the nine-county area a second (marginal) nonattainment status under the 2008 National Ambient Air Quality Standards as required by the Clean Air Act. The EPA's final designations are based on air quality monitoring data; recommendations submitted by the states and tribes; and other technical information including emissions, commuting patterns, population growth, weather patterns and topography.

The 2012 marginal nonattainment designation does not impose any new planning requirements on the State of Colorado at this time; however, the Denver Metro Area/North Front Range region must meet the standard before Dec. 31, 2015 or a moderate non-attainment status and new requirements may be imposed.

2013 OZONE LEVELS

A community will meet the eight-hour standard when the three-year average of the annual fourth highest daily maximum eight-hour ozone concentration measured at each monitoring site is less than 76 ppb. In 2013, the Rocky Flats North monitor recorded the highest value of the season at 93 ppb on July 17. This was followed by the Fort Collins

West and National Renewable Energy Lab (NREL) monitors, which recorded 91 and 90 ppb that same day, respectively.

Area monitors recorded values at or above 75 ppb on 19 days during the 2013 season, with 73 individual occurrences across all 16 monitors. The greatest number of exceedances occurred in July, which is typical given that temperatures are usually at their highest. When combined with the two previous years (2012 and 2011), the highest fourth maximum average occurred at Chatfield State Park and Rocky Flats North at 83 ppb. Eight other monitors recorded three-year averages at or above 75 ppb as well -- including Welby (76 ppb), Highland (79 ppb), South Boulder Creek (77 ppb), Welch (78 ppb), NREL (82 ppb), Rocky Mountain National Park (76 ppb), Fort Collins (70 ppb) and Greeley (76 ppb). All values at monitors that exceed the standard of 75 ppb indicate a violation of the federal standard. All other monitors maintained averages at or below the 75 ppb limit. Additional ozone monitoring data for the 2013 summer ozone season, as well as previous seasons, is contained in Appendix C.

THE OZONEAWARE CAMPAIGN

The OzoneAware campaign was initiated in 2005 -- following the receipt of significant federal funding -- to enhance a voluntary ozone reduction program that the RAQC had administered in-house for the previous six years. The original program was initiated in 1999 after the metropolitan Denver region experienced elevated ground-level ozone readings exceeding the EPA's standard during the summer of 1998. It began as a simple partnership between the RAQC and CDPHE to issue alerts when ozone was forecasted to reach elevated levels. The program has evolved over the past nine years to engage a

broad audience (Denver Metro/Front Range residents) through a comprehensive approach that has included paid media, outreach, education, earned media and social media components. The primary messaging of the campaign from 2005-2012 focused on providing tips for ozone reduction.

This approach proved particularly impactful in the first few years of the campaign and has continued to be largely successful in raising awareness about ground-level ozone pollution and reduction activities over the life of the program. While research shows that the number of respondents believing ozone pollution is a problem has increased since the inception of the campaign, research conducted between 2005 and 2011 showed a plateau in the overall effect of the campaign. The RAQC contracted with Corona Insights in 2012 to confirm these findings via focus groups and explore options for fresh campaign traction. In 2013, the RAQC endeavored to build upon previous successes to refresh campaign elements and reinforce messaging for a renewed and lasting impact.

The renewed OzoneAware program has continued to encourage ozone-reducing behaviors through tip-based messaging while also engendering a personal connection to the issue and emphasizing how individuals can make a difference. To that end, the 2013 OzoneAware campaign introduced three important new elements:

1. **Messaging** that informs the public that most ozone pollution comes from the direct actions of people – especially people using their cars, mowers, and paints and solvents – and that their actions make a difference
2. **An exclusive media agreement with KMGH and spokespersons** from KMGH/Azteca – Mike Nelson and Antonio Sanchez, among other Channel 7 meteorologists – to reinforce messaging on TV, in schools, and at community events
3. **An online/mobile engagement tool** that will allow metro residents and participants of the Every Trip Counts and OzoneAware Programs to track their ozone reduction behaviors and see for themselves how their individual actions impact our air quality

The program has utilized the OzoneAware website, earned and social media, and community and local government outreach to expand on both new messaging and existing tips messaging. Strategic targeting and a new mix of paid media have furthered the team's layered approach to the campaign.

OzoneAware has managed earned media, social media, and local government and community outreach efforts in-house. Following a formal request for proposal (RFP) process, the RAQC signed a new contract with incumbent Launch Advertising to revitalize the creative marketing components of the program in support of this strategy. Additionally, OzoneAware has engaged with SE2 Communications and WideFoc.us to assist in Hispanic and social media outreach efforts, respectively. OzoneAware maintained the services of incumbent interactive consultant Rabble and Rouser for the 2013 campaign.

A holistic approach to communications has been and will continue to be imperative to the success of

a revitalized campaign. To that end, OzoneAware has implemented the following communications elements in cooperation with its consultants.

COMPONENTS

The 2013 OzoneAware 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, were collectively employed to raise awareness about ozone pollution throughout the region. They 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

OzoneAware issues Ozone Action Alerts to warn citizens of the potential for elevated ozone levels and encourage behavior change to reduce pollution levels. The technical services staff of the Air Pollution Control Division (APCD) at CDPHE developed a system more than 10 years ago to forecast meteorological conditions supporting the development of ozone concentrations at or above 75 ppb, which are reported on an as-needed basis. APCD staff meteorologists use 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.

During the 2013 ozone season, the RAQC used Constant Contact to send e-mails to interested media and local government contacts, businesses, citizens and other stakeholders 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 and were included as part of the campaign's paid media strategy in traffic reports on 27 radio stations. Local television stations made an effort to mention the alerts during various morning and evening weather broadcasts, and KMGH and Azteca included them as part of their paid media agreements.

The RAQC posted ozone alerts to the web site so people visiting the site could access current air quality information, and -- as in previous years -- many local governments placed a link on their web sites to display current air quality conditions as well. Seven templates were created using messaging related to tips, personal responsibility and the new OzoMeter. The alerts included information on how ozone is formed, the health effects of ozone, and how residents can help reduce ozone. They also included the CDPHE hotline number and contact information for OzoneAware communication staff, as well as a Spanish language sentence directing Spanish language readers to the OzoneAware website for more information.

Results

The RAQC emailed the Ozone Action Alerts to 828 local government representatives, media outlets, businesses and citizens. The alerts allowed local governments to make changes in operational behavior to reduce VOC emissions, and further provided local government and media outlets information to inform citizens about the effects of ozone and encourage behavior change.

A total of 32 alerts were issued during the 2013 ozone season. 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. OzoneAware added 130 new recipients to its alert distribution list during the 2013 season.

2. Media Advertising

The RAQC continued the paid advertising campaign initiated in 2005 to raise awareness about ozone; however, a new approach was taken with regard to target audience, placement and messaging. In past years, the RAQC has implemented a broad-reaching paid advertising campaign using billboard and downtown outside signage, as well commercial advertisements on various radio and television stations. These past advertisements were focused solely on raising awareness and providing tips for ozone reduction. The target audience was adults age 25-54.

For the 2013 season, OzoneAware worked with Launch Advertising to design and implement a new paid media strategy based on evaluation research and the evolution of the campaign. This strategy centered on building on the success of past campaigns by engaging individuals with a more targeted media strategy, a new web and mobile-based engagement tool (The OzoMeter) and new messaging to help make a more personal connection to the issue. In lieu of a broad-based campaign, OzoneAware focused on reaching key target audiences with the goal of creating program ambassadors.

These target audiences included:

- Adults, age 34-54
- Empty nesters, age 55-65
- Young urban professionals, age 23-33
- Hispanic adults, age 18-34

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, extending the campaign's reach.

Strategic media channels included:

- An exclusive partnership with KMGH /ABC, which included station support, community involvement, extension to an Hispanic audience and social media posts to station followers
- TV advertisements on PBS
- Radio advertisements on NPR
- Radio advertisements and alerts on Total Traffic Radio
- Outdoor billboard advertising
- Facebook advertising

Results

The 2013 multi-media paid advertising campaign resulted in 38,070,430 gross impressions (the sum of audiences that a medium or combination of media reaches represented in thousands), and more than 90 percent reach (number of different people exposed to a commercial across a stated period). The full paid media campaign ran from June 3 through August 31, with radio advertisements beginning one week earlier on May 27. Specifically, the media mix included the following:

- KMGH/Azteca:
 - Three-month TV schedule
 - Station ambassadors for the campaign – Mike Nelson, KMGH and Antonio Sanchez, Azteca
 - Creation of :15 and :30 TV spots featuring ambassadors
 - Online banners
 - Weather sponsorships

- A partnership with Midas offering free tire pressure checks
- Nearly 2 million digital impressions, 600,000 video impressions and mobile banners
- Facebook posts and Tweets to station followers
- Community outreach with meteorologists Mike Nelson, Matt Makens and Maureen McCann making appearances at schools, youth water festivals and Bike to Work Day
- Total of 134 bonus spots on KMGH and 142 on Azteca
- One on-air interview with RAQC Executive Director Ken Lloyd
- One call center event focused on Bike to Work Day
- PBS
 - :30 and :15 spots running 12 times per week during news and prime time
 - A bonus rotation running four times per week
 - A bonus spot running five times per week on the Create channel
 - 30 showings of the Midas Partnership advertisement and 100,000 online impressions
- NPR Denver and Fort Collins/Greeley
 - :10 and :15 radio spots running during drive times
- Premiere Traffic Network
 - :10 and :15 minute traffic sponsorship advertisements running 55 times per week on Clear Channel and Lincoln Financial stations (including ozone alerts, as appropriate)
 - Bonus schedule
- Outdoor

- Eight paid bulletins (14' x 48') rotating in 19 high-traffic locations for 12 weeks via CBS Outdoor and Lamar Outdoor
- Bonus: four bulletins, two premium panels, 10 posters, all production
- Denver Bike Sharing
 - B-cycle sponsorship, including 100 bike shrouds, 10 baskets, and 30 day passes for giveaways

All media aspects, including creative work, were developed simultaneously with other components of the program to ensure continuity throughout the entire campaign. Creative designs and detailed results of the paid media advertising campaign are detailed in Appendix B. New TV commercials can be viewed on OzoneAware's YouTube Channel at: <http://www.youtube.com/user/raqcozone1445>

3. The OzoMeter

The RAQC worked with Rabble and Rouser to develop a web- and mobile-based public engagement tool that would allow Denver Metro/Front Range residents and participants of the Every Trip Counts and OzoneAware programs to track their ozone reduction behaviors and see for themselves how their individual actions impact our air quality. This tool, which was named *The OzoMeter*, was branded by Launch Advertising and incorporated into overall campaign messaging and outreach efforts.

The OzoMeter is housed on the OzoneAware website. Users can register and track their individual trips on an individualized dashboard, or they can simply use the tool to generate data that is unsaved. The tool tracks miles traveled by various modes of transportation and informs users of their air quality impact in terms of ozone and carbon reductions. It

also tells users how much money they have saved and lets registrants log additional ozone reduction behaviors such as mowing in the evening, stopping at the click and combining errands and driving less. Once users have logged an entry, they may post it to Facebook and/or Twitter to showcase their clean air progress.

Results

The OzoMeter proved to be a valuable addition to the campaign, with 2,711 people registering and 476 actively tracking trips from April 25 through November 5. Overall, OzoMeter users tracked the following:

- 215k Miles Reduced
- 7k lbs Ozone-Causing Emissions Reduced
- \$122k Cost Savings
- 207k lbs CO2 Reduced
- 294 Mower their lawn or refueled car after 5 PM
- 414 Stopped refueling their car at the click
- 693 Combined errands and drove less

4. Social Media

A focus on social media offered an opportunity for OzoneAware to expand on tips messaging and health-related information to support the broader messages of the 2013 campaign. Further, the development of the OzoMeter offered an additional opportunity to expand OzoneAware's social media presence and engagement with its followers. To that end, 2013 social media efforts included:

- Contracting with social media strategy experts at WideFoc.Us to examine the campaign's existing presence and develop a strategic plan to roll out The OzoMeter via social media channels
- Development of a social media calendar with daily content and weekly themes

- Ongoing promotion of contests, community outreach efforts and partner initiatives
- Development and posting of compelling info graphics and other material
- Posting of Ozone Alerts
- Reminders to use the OzoMeter
- Continued social media partnerships with DRCOG, CDOT, ALA, Envirotest, CDPHE, Denver Environmental Health, BikeDenver, B-Cycle and Walk Denver
- Identification and engagement of new strategic partners
- Paid advertising on Facebook in English and Spanish

Results

The RAQC's purposeful focus on social media during the 2013 campaign resulted in a 57 percent increase in Facebook engagement and a 106 percent increase in Twitter followers. At the end of the 2013 season, OzoneAware had a total of 817 Facebook likes and 819 Twitter followers.

Additionally, new partnerships were formed with important social media influencers such as Denver Parent, which assisted OzoneAware in further engaging key target audiences.

5. Media Relations

The RAQC covered media relations efforts in-house, pitching the kick-off of ozone season to all appropriate print, radio, TV and social media, and tailoring messaging for publications and reporter beats as appropriate. The RAQC also provided an OzoneAware-bylined article regarding ozone pollution and voluntary reduction activities to local government and community news outlets for summer publication.

Results

Media relations efforts resulted in 24 media stories related to ground-level ozone. Additionally, newly tailored messaging and outreach to unique publications such as *Colorado Runner* and *Prime Time for Seniors* resulted in articles targeted to previously untapped stakeholder audiences. A list of media outlets covering ozone during the 2013 season is included below.

- 99.5 the Mountain
- Alice 105.9
- Azteca
- Cherry Hills Village
- City of Golden
- City of Littleton
- City of Westminster
- CO Moms Know Best
- Colorado Runner Magazine
- Denver B-Cycle
- Denver Channel
- Denver Parent
- DRCOG
- Englewood Citizen
- KOSI 101.1
- KUVU
- Larimer County
- North Forty News
- Northeast Walk Fest
- Prime Time for Seniors
- Stapleton Front Porch
- University of Colorado Denver College of Architecture and Planning
- Walk Denver

6. Outreach

Public outreach played a critical role in raising awareness about summer ozone pollution during the 2013 season. Public outreach augmented paid and earned media efforts and allowed RAQC staff to engage face-to-face with stakeholders to expound upon the messages delivered via other channels. To

that end, the RAQC implemented a robust strategic outreach plan that included website updates, event outreach, e-mail marketing, and weekly prize drawings while introducing new outreach strategies aimed at reaching school-aged youth and Hispanic populations.

a. Web site

The RAQC worked with Rabble and Rouser to update the OzoneAware.org website to include the OzoMeter, as well as new messaging and graphics, monthly promotion announcements and a revised Spanish language page with a dedicated URL – www.concienciaozono.com.

Results

As illustrated by the numbers included in the chart below, the web site proved to be a powerful communication tool in 2013.

Analytics	2013	2012	Approx. % Change
Site visitors (Jan.-Oct.)	18,212	9,129	+99%
Site visitors (ozone season)	8,714	4,535	+92%
Page views (Jan.-Oct.)	50,828	21,817	+133%
Page views (ozone season)	23,402	11,946	+104%
Spanish-lang. page views (Jan.-Oct.)	285	25	+1,040%
Spanish-lang. page views (ozone season)	179	6	+ 2,883%

b. Clean Air Community

OzoneAware continued the pledge concept initiated in 2009 to encourage area residents to join its Clean Air Community by committing to certain ozone-reducing behaviors. The pledge complemented the newly introduced OzoMeter nicely, and citizens were inspired to use the tool to track some of the activities to which they pledged (the OzoMeter was limited to three behaviors: 1. Stop at the Click, 2. Refuel in the Evening and 3. Combine Errands and Drive Less). This allowed for an organic expansion of the tips messaging used in previous years and facilitated the delivery of messaging conveying that individual actions make a significant collective impact.

Previous years' pledge cards were retired, and OzoneAware focused entirely on electronic collection. Visitors to the website were able to easily pledge online, view the names of other pledges and track their individual actions. Additionally, OzoneAware used an iPad to collect new pledges at events. New pledges were sent welcome e-mails introducing the OzoMeter and were added to e-mail marketing lists for further contact.

Results

OzoneAware signed 1,016 new pledges to its Clean Air Community in 2013, nearly 500 of which were signed at community events.

c. Event Outreach

OzoneAware exhibited at a number of community events in order to raise awareness about summer ozone pollution and help area residents understand how their individual actions impact air quality. These events provided OzoneAware an opportunity to engage one-on-one with interested parties to elaborate on campaign messaging and create ambassadors for the issue.

To that end, staff provided information on the causes and effects of ozone and informed citizens about how they can reduce ozone pollution as individuals. Additionally, staff used an iPad to allow people to take a pledge for clean air, sign up for ozone action alerts, and familiarize themselves with the functions of the OzoMeter. Prize drawing displays and branded promotional items such as frisbees, bicycle patch kits, air fresheners, hats and T-Shirts drew people to the OzoneAware table. A new, colorful tablecloth and other signage incorporating new graphics and messaging refreshed the program's look and provided consistency with billboards and TV advertisements.

Results

OzoneAware had a presence at 21 events:

- Adams County Propane School Bus Event
- ALA Fight for Air Climb
- Aurora Waterfest
- Better Block Five Points
- Bike to Work Day
- Blazing Bullets Trail Run Westminster
- Civic Center Eats (3)
- Colorado State Fair
- Denver Public Schools Science Teacher's Fair
- Denver Starbucks Employee Sustainability Day
- Earth Day Denver
- Earth Day Westminster
- Get Outdoors Colorado
- Hunter Douglas Employee Fair
- Mow Down Pollution
- Northglenn, Thornton, Westminster Water Fest
- Run the Rocks
- South Platte Riverfest
- Sustain Arvada
- Viva Streets
- West Rail Line Opening Party

Nearly 7,000 promotional items were distributed -- including 2,500 bicycle patch kits, 2,000 frisbees and 2,000 air fresheners, as well as surplus hats and T-shirts from BikeDenver sponsorship efforts.

Additionally, bike-related prizes such as lights and travel air pumps were awarded to winners of a Bike to Work Day drawing, and bicycles were given away in prize drawings at South Platte Riverfest and Viva Streets. Participants were required to pledge their commitment to clean air in order to be entered in prize drawings. Overall, OzoneAware signed nearly 500 new members to its Clean Air Community at events in 2013.

d. *Get In It To Win It*

OzoneAware held weekly prize drawings based on monthly themes to incentive area residents to participate in the OzoneAware program. People who pledged to the Clean Air Community, used the OzoMeter and engaged with OzoneAware via social media were entered to win.

Monthly themes/ weekly prizes were as follows:

- June: *Celebrating Bike Month*
 - Specialized Work Bike
- July: *Places to Go, People to See*
 - \$200 gift cards to Ticketmaster and a book of transit tickets
- August: *Eco-Friendly Choices at Home*
 - Black and Decker electric mower

Additionally, 24-hour B-Cycle memberships provided by Denver Bike Sharing as part of the paid media agreement were awarded to repeat pledges (people pledging in 2013 and previous years) and winners of random social media contests.

The program was promoted via e-mail marketing to OzoneAware Constant Contact lists, website updates and community event outreach.

Results

The *Get In It To Win It* program was a successful element of the 2013 campaign. Incentivizing participation contributed to a significant increase in pledges, OzoMeter users and social media engagement. Further, the program provided excellent content for regular e-mail marketing to more than 2,000 stakeholders, and showcasing prizes at events drew people to the OzoneAware table. Six bikes (two at events), four Ticketmaster/ transit ticket prizes and four Black and Decker lawn mowers were awarded to program participants. Thirty B-Cycle memberships were distributed overall.

e. BikeDenver sponsorship

OzoneAware sponsored BikeDenver's parking corrals for the third consecutive year in 2013. BikeDenver's parking corrals provide free, secure bike parking for citizens at large-scale events and festivals in Denver in order to encourage the use of bicycles and promote biking as a healthy, fun transportation solution.

Per this agreement, BikeDenver displayed OzoneAware signage and distributed OzoneAware promotional items at a number of events throughout the summer. BikeDenver staff members and volunteers also wore co-branded OzoneAware/BikeDenver T-shirts and hats at events, and the organization included the OzoneAware logo on its website and in online publications. New banners were produced for bike corrals, which included messaging encouraging use of the OzoMeter to log bike trips. A QR code included on the banners made it easy for people to

quickly locate the OzoMeter mobile site using their smart phones.

Results

Through BikeDenver, OzoneAware had a presence at more than 35 events with an overall estimated attendance of nearly 1.5 million. BikeDenver also published several Twitter and Facebook posts related to ground-level ozone and OzoneAware.

f. Hispanic Outreach

OzoneAware engaged consultant SE2 Communications to assist in strengthening outreach to Hispanic audiences in 2013. To that end, OzoneAware and SE2 Communications implemented a Hispanic outreach program that included a complete rewrite of the Spanish language section of the OzoneAware website, new Spanish language Facebook advertisements, inclusion of Spanish language content in Ozone Action Alerts, and significant earned media outreach, as well as the development of a Spanish-language TV commercial and customized Facebook posts for Azteca.

Results

Spanish-language outreach stemmed a significant increase in audience engagement. Efforts with regard to the Spanish-language section of the website resulted in a more concise, user-friendly section, which saw a 1,040 percent increase in page views in 2013. Additionally, media outreach efforts resulted in one newspaper story, one half-hour radio interview and two TV media stories. Univision also dedicated one minute per newscast to explain the formation and effects of ozone on action days. With regard to social media, OzoneAware's Spanish-speaking Facebook audience grew from five in 2012 to 23 in 2013. OzoneAware promoted three Spanish stories, which reached an audience of 8,661. Azteca

also posted regularly about ozone (customizing content from OzoneAware's content calendar for its own audience) and commented on or liked several of OzoneAware's posts. As part of the partnership established with KMGH/Azteca Colorado, the TV station produced a promo with Azteca's news anchor, Antonio Sanchez, with script writing and production supervision from SE2.

g. Put a Cap on Ozone

Put a Cap on Ozone was a cooperative effort of Envirotest – Air Care Colorado, CDPHE, the RAQC and NAPA Auto Parts to help with the state's voluntary ozone reduction efforts.

Studies have shown that replacing faulty gas caps is a cost-effective way to reduce vehicle emissions, including those that cause harmful ground-level ozone. In 2012, about 3,000 vehicles a month failed the gas cap portion of the vehicle emissions inspection at Air Care Colorado stations. The 2013 *Put a Cap on Ozone* program was funded by Envirotest – Air Care Colorado and aimed to replace up to 6,000 gas caps between July 1 and August 31.

Results

Coupons for \$10 toward the purchase of a new gas cap at any participating NAPA store were given after a vehicle failed the gas cap portion of the emissions inspection at an Air Care Colorado station. A total of 2,743 coupons were redeemed, presenting an approximate redemption rate of 75 percent.

h. Mow Down Pollution

The RAQC partnered with Black and Decker to host its annual Mow Down Pollution lawn mower exchange at Dick's Sporting Goods Park on May 11th. Suncor Energy generously provided \$45,000 in grant funding for the event. As part of the

OzoneAware program, Mow Down Pollution offers significant discounts on electric lawn equipment and encourages area residents to permanently retire and recycle old gasoline-powered mowers. Discounts of up to \$130 were provided, and \$34,310 was given in total subsidies.

Results

A total of 285 electric Black and Decker mowers were purchased, with 72 percent of participants recycling an old mower. This resulted in the total elimination of 205 gas-powered mowers and the subsequent prevention of 10,045 pounds of volatile organic compounds and 20,705 pounds of carbon monoxide from entering Denver's air. Several compliments about the program and mowers were received after the event.

Mower Model	Units Sold	Unit Subsidy	Total Subsidy
CM1836 W/TRADE	142	\$130.00	\$18,460
CM1836 WO/TRADE	63	\$100.00	\$6,300
CM1936 W/TRADE	62	\$130.00	\$8,060
CM1936 WO/TRADE	17	\$80.00	\$1,360
SPCM1936 W/TRADE	1	\$130.00	\$130
TOTAL	285		\$34,310

i. Clean Air Hero Awards

OzoneAware introduced a new member recognition element into the 2013 campaign. *Clean Air Heroes* recognized seven Clean Air Community members for their commitment to air quality and rewarded them with \$50 Rock Bottom Restaurant Group gift cards. A profile was created for each member, which included their answers to questions about their air quality habits, as well as their photograph and the reason for which they'd been named a *Clean Air*

Hero. These profiles were posted to the OzoneAware website, and OzoneAware highlighted one per day during the last week of August on its social media sites. Certificates were sent to each recipient with his or her gift card.

Results

Recipients of awards were excited to receive accolades for their efforts, and the program provided a chance to reach out to the Clean Air Community to reinforce its messaging as well. Additionally, recipients and friends reposted their profiles via social media, extending OzoneAware's social media reach.

7. School-Aged Youth Outreach

OzoneAware increased its focus on outreach to school-aged youth in 2013. To that end, the campaign worked with strategic partners to implement two purposeful programs designed to reach students and their parents – Clean Air Kids and the Kids 4 Clean Air Colorado poster contest.

a. Clean Air Kids

With a \$5,000 grant from the National Jewish Clean Air Projects grant program, RAQC staff worked with Launch Advertising and KMGH meteorologist Matt Makens to develop an ozone-centered activity book for kids.

The "Become a Clean Air Kid" activity book includes an introduction to ground-level ozone pollution and tips for reducing the pollutant. Also included are a coloring activity, a word search, an ozone pollution maze that explains the health effects of ozone, and creative activities that will encourage students to use their imaginations to further explore air quality concepts and make social change. Instructions and templates for creating a family ozone action plan,

instructions for using the OzoMeter to track ozone reduction behaviors, and information on ozone action alerts are highlighted at the end of the book as a call to action for students and parents.

Channel 7 meteorologists disseminated the books to teachers and students at school visits, where they encouraged teachers to incorporate the OzoMeter and family action planning activities into their lesson planning. Additionally, Channel 7 and OzoneAware distributed the books at community events, and books were also made available at Midas locations through the Channel 7 partnership.

Results

Nearly 5,000 books were disseminated, with Channel 7 meteorologists distributing about 2,700 directly to youth in schools.

b. Kids for Clean Air Colorado Poster Contest

OzoneAware partnered with Envirotec – Air Care Colorado, CDPHE, Denver Environmental Health, and ALA Colorado to sponsor an air quality poster contest for elementary and middle school students in the metro area. The contest was centered on four themes, segmented by grade level:

- Grades 1-2: Put a Cap on Ozone
- Grades 3-4: Engines Off
- Grades 5-6: Stop at the Click
- Grades 7-8: Maintenance Matters

The contest was promoted through advertisements on Radio Disney (via Air Care Colorado), letters to schools and teachers, and partner websites and social media.

Results

About 75 total entries were received. First place prizes went to students from Manhattan Middle School in Boulder, El Dorado K-8 in Louisville, and

the Denver Language School. The top three posters in each age group were awarded the following:

• 1st Place:

- Bicycle
- Artwork featured in Air Care Colorado stations
 - \$1,000 environmental/sustainability project grant for student's school
 - Radio Disney awards rally at student's school
 - Chance to record a clean air message commercial at Radio Disney

• 2nd Place:

- Bicycle helmet
- Water bottle
- Artwork featured on Air Care Colorado website

• 3rd Place:

- Water bottle
- Artwork featured on Air Care Colorado website

8. Local Government Outreach

Local governments are among the RAQC's most important partners in ozone reduction efforts. Local governments have the capacity to reach a broad number of constituents in a number of ways while making significant decisions regarding air quality impacts at an organizational level as well. To that end, OzoneAware extended its outreach to local governments in 2013 to further increase awareness and extend messaging regarding individual and collective efforts.

Local government outreach in 2013 included:

- Launch of a web-based "Air Quality Toolkit for Local Governments," which provided information and resources to assist local governments in

planning and implementing programs to improve air quality

- Lobby displays (7' tall x 3' wide banner bugs) introducing ozone reduction tips and the OzoMeter
- Inclusion of local government media outlets/newsletters in media distribution
- A RAQC-bylined article on ozone awareness and voluntary reduction behaviors for local government publications
- Participation in local government and community events

Results

OzoneAware rotated lobby displays in more than 80 community centers during the 2013 ozone season, reaching an estimated 361,091 area residents. Additionally, at least eight local governments published information about ozone season in their newsletters, and OzoneAware participated in 15 local government events. The "Air Quality Toolkit for Local Governments" has received 986 page views since its publication in February 2013, with 751 unique page views.

CAMPAIGN RESEARCH

In May 2013, Rabble and Rouser conducted pre-campaign research to assess baseline knowledge, awareness of ozone pollution, and current behaviors in the Denver metro area. Subsequently, in August 2013, post-campaign research was conducted to assess the impact of the campaign, utilizing the same survey instrument.

Research efforts measured changes in public awareness and knowledge of the issue of ozone pollution in general. Additionally, specific awareness of the actions that individuals can do to help reduce ozone pollution, the 2013 campaign, its campaign

elements, and changes in behavior between May and August 2013 were measured.

Rabble and Rouser surveyed a random sample of residents in the seven Denver metro counties: Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, and Jefferson. Each online survey included 16 questions. A total of 380 and 433 people completed the pre and post surveys, respectively. Based on the sample size, the margin of error for the research is +/- 4.71 for the post-campaign data and +/- 5.03 percent for the pre-campaign data.

Results

All of the following increased post-campaign:

- Residents' perception of air pollution's negative impacts (small increases in all categories measured)
- Familiarity with the problem of ground level ozone (+5.6 percentage points) and the perception of ground level ozone as a problem (+6.7 percentage points)
- Residents who "Strongly Agree" that their individual actions can make a difference (+7.2 percentage points)
- Unaided awareness of specific actions that reduce ozone pollution (increases in almost all actions)
- Awareness of OzoneAware.org, Ozone Action Alert, and Ozone Aware OzoMeter (+5.5, +3.5, +3.3 percentage points respectively)
- Awareness of ozone pollution programs in billboard advertising (+5.3 percentage points) and magazine and newspaper advertising (+5.1 percentage points)

APPENDIX A.

PAID MEDIA SCHEDULE

A1: PAID MEDIA ADVERTISING CAMPAIGN JUNE – AUGUST 2013

Weeks of...	April		May				June				July				Aug.				Sept.				Oct.				TOTALS	VALUE					
	1	8	1	2	2	6	1	2	2	3	1	1	2	1	8	1	2	2	5	12	1	2	2	9	16	2	3	7	1	2			
			5	2	9		3	0	7		0	7	4			5	2	9			9	6				3	0		4	1			
CAMPAIGN EMPHASIS																																	
TELEVISION																																	
KMGH/KZCO Partnership											X	X	X	X	X	X	X	X	X	X	X										12 Weeks		
Dayparts - AMN, EN, LN, including weather											48	48	48	47	48	47	48	47	48	47	48	47									571.7 TRPs		
											.0	.0	.0	.0	.0	.0	.0	.0	.0	0	48.0	47									723 Spots		
sponsorships, incl. online video ads KMGH site																																\$108,674.70	
& AdapTV 1,720,000 Imp, Facebook/Twitter																																\$157,578.32	
posts, Mike Nelson at events, 3 call centers																																	
Total Impressions - 9,450,201																																	
47.8% Reach (790,134 total A25-54), 12.0x Freq																																	
Midas Partnership, 40x KMGH, 700,000 imp online															X	X															2 Weeks		
Total Impressions - 1,576,090															26	26																53.0 TRPs	
															.5	.5																\$0.00	
																																\$15,100.00	
KRMA/PBS											X	X	X	X	X	X	X	X	X	X	X										12 Weeks		
:30 & :15 spots News & Prime, 12x/week											5.	5.	5.	5.	5.	5.	5.	5.	5.	5.4	5.4	5.									64.2 TRPs		
											4	4	4	4	4	4	4	4	4			4									252 Spots		
4x/week to run bonus 12n-12m rotator																																\$22,542.00	
5x/week to run bonus on Create channel																																\$32,685.90	
Total Impressions - 2,574,766																																	
12% Reach (198,360 total A25-54), 5.4x Freq																																	
Midas Partnership,30x KRMA, 100,000 imp online															X	X	X														3 Weeks		
Total Impressions - 181,830															2.	2.	2.															6.6 TRPs	
															2	2	2															\$0.00	
																																\$6,000.00	
OUTDOOR																																	
Paid & Bonus Bulletins (14' x 48')																															3 Periods		
Full Market coverage, high traffic locations											I-70 w/o Wadsworth				I-70 w/o Wadsworth																\$87,500.00	\$126,000.00	
Locations are TBD through negotiations											20th w/o Stout				N. Colorado s/o I-70																		
CBS Outdoor Impressions - 13,586,724											8th w/o Santa Fe				Colfax Viaduct e/o I-25																		
Lamar Outdoor Impressions - 5,705,176											Alameda w/o				I-70 s/o W.				6th Viaduct/Osage														


[illegible]

APPENDIX B.

NEW CREATIVE ELEMENTS 2013

B1: WEB SITE: OZONEAWARE.ORG

[WHAT IS GROUND LEVEL OZONE?](#)
[OZONE ACTION ALERTS](#)
[PREVENTING OZONE](#)
[NEWS AND UPDATES](#)








OzoneAware

LET'S TAKE CARE OF OUR SUMMER AIR


DENVER METRO - AIR QUALITY

ACTION DAY! FOR VISIBILITY	Expected: MODERATE
	Current: GOOD
	Visibility: NOT AVAILABLE





 819

[EN ESPAÑOL >](#)

ARE YOU A STINKER OR A BREATH OF FRESH AIR?



Calculate your impact now >>

[< BACK](#)
1
2
3
4
5
[NEXT >](#)


BE OZONE AWARE >


Join in fellow breathers!

Every choice you make to reduce ozone pollution matters. Sign up to receive Ozone Action Alerts via email, and receive updates on events and ozone-related news.

JOIN OUR CLEAN AIR COMMUNITY >

Ozone emissions are created by you and me. The same people breathing the air. A few simple actions on hot summer days will help us all breathe a little easier.





OzoMeter



Every choice you make to reduce ozone pollution matters. Track your activities and trips to see how your positive actions can help reduce pollution and save you money.

Check out these results:


220k	Miles Reduced
7k	Ibs Ozone-Causing Emissions Reduced
\$124k	Cost Savings
211k	Ibs CO2 Reduced

B2: The OzoMeter


[WHAT IS GROUND LEVEL OZONE?](#) [OZONE ACTION ALERTS](#) [PREVENTING OZONE](#) [NEWS AND UPDATES](#)



Every choice you make to reduce ozone pollution matters. Track your activities and trips to see how your positive actions can help reduce pollution and save you money.



LOG YOUR TRIPS



LOG YOUR ACTIVITIES

More ways I helped improve air quality:

- ☐ Mowed lawn or refueled car after 5 PM
- ☐ Stopped refueling car at the click
- ☐ Combined errands and drove less

CALCULATE





OVERALL TOTALS

0
Miles Reduced

MY TOTALS

0
Grams Ozone-Causing Emissions Reduced

OVERALL ACTIVITIES

MY ACTIVITIES

Mowed lawn or refueled car after 5 PM

Stopped refueling car at the click

B3: OZONE ACTION ALERT (Rotated one of Seven)



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.

HOY ES UN DÍA DE ALERTA POR OZONO. PARA CONSEJOS PREVENTIVOS VISITA www.concienciaozono.org.

SO WHAT'S THE DIRT ON OZONE?

Ground-level ozone pollution is created when emissions from everyday items -- such as gas powered vehicles and lawn equipment, 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.

FOR MORE INFORMATION:

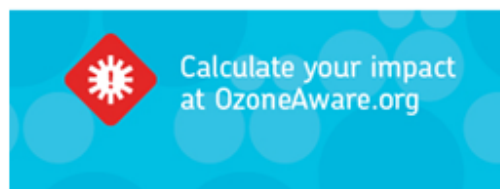
24-Hour Air Quality Hotline: [303.758.4848](tel:303.758.4848)

Media Inquiries: Meg Alderton,
[303.478.8316](tel:303.478.8316) (cell)

OzoneAware: www.OzoneAware.org
www.concienciaozono.org

RAQC: [303.629.5450](tel:303.629.5450) or www.raqc.org

CDPHE: [303.692.3100](tel:303.692.3100)



:

B4: OUTDOOR ADVERTISING BILLBOARDS



1

B5: B-CYCLE ADVERTISING



5" tall x 5.125" wide
.25" corners

B6: BIKEDENVER SPONSORSHIP MATERIALS



B7: EVENT OUTREACH MATERIALS

Table Skirt:



Frisbee:



Car Air Freshener:



B8: *BECOME A CLEAN AIR KIDBOOK*

Ground-level ozone pollution is bad stuff! It makes us sick, hurts our eyes, and is really unhealthy for kids and grown ups with asthma. Lots of things cause ozone pollution, like cars, trucks, lawn mowers, paint, and factories. But when we work together, we can make sure there's clean air for all to share!



BECOME A CLEAN AIR KID!



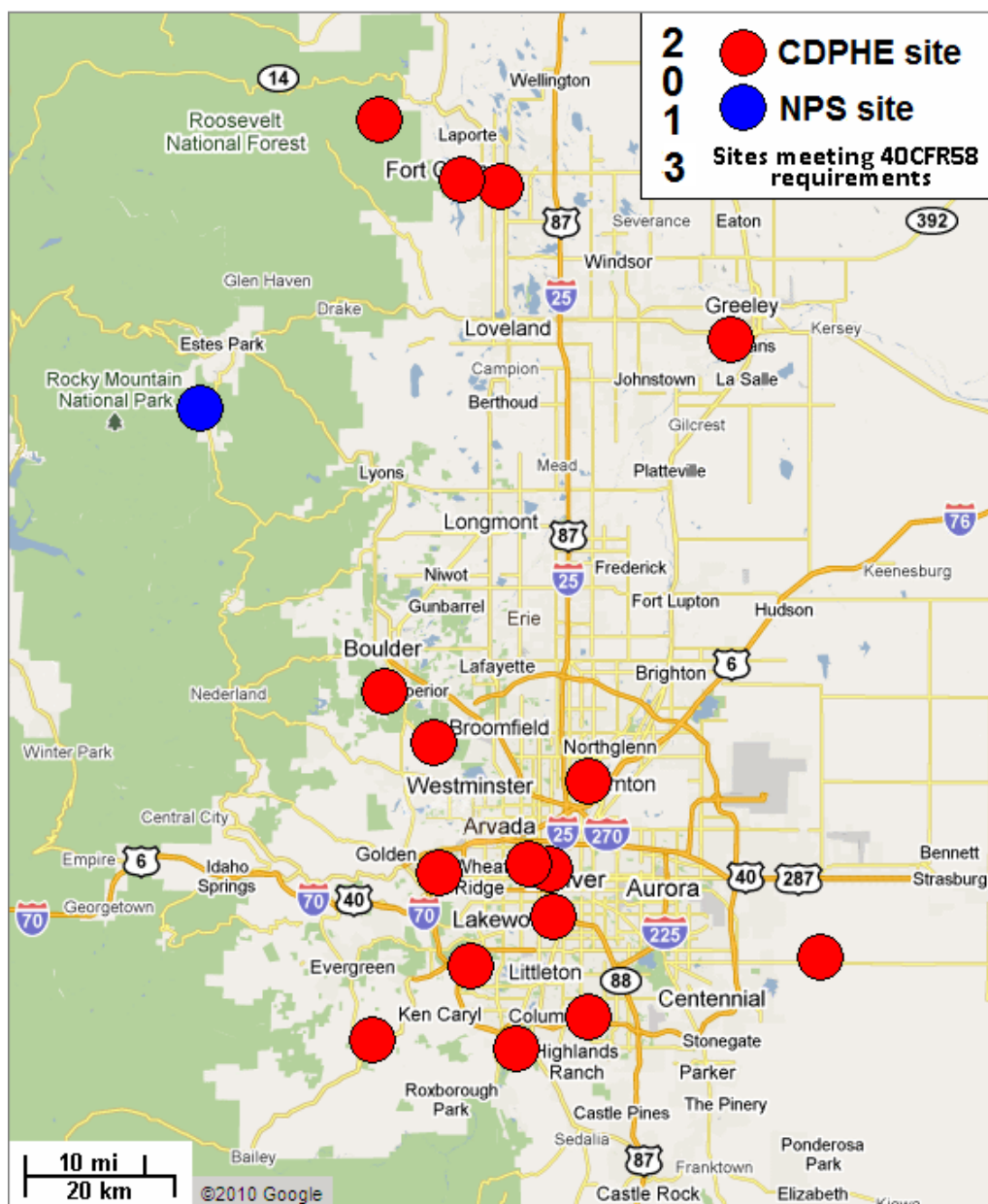
LET'S TAKE CARE OF OUR SUMMER AIR.
OzoneAware.org

IN PARTNERSHIP WITH DENVER'S 

APPENDIX C.

OZONE DATA

C1: MAP OF THE OZONE ATTAINMENT/MAINTENANCE AREA AND MONITORING SITES



C2: AQI/YSI SYSTEM REPORTING SITES FOR OZONE DENVER-METROPOLITAN AND FRONT RANGE REGIONS

Site Name	Abbreviation	Location
Welby	WBY	3174 E. 78th Avenue
Highland	HLD	8100 S. University Boulevard
Aurora East	AURE	36001 E. Quincy Avenue
S. Boulder Creek	SBC	1405 1/2 S. Foothills Highway
CAMP	CAMP	2105 Broadway
La Casa	CASA	4545 Navajo Street
Chatfield State Park	CHAT	11500 N. Roxborough Park Road
Welch	WCH	124000 W. Highway 285
Rocky Flats - N	RFN	16600 W. Highway 128
National Renewable Energy Laboratories	NREL	20th Avenue & Quaker Street
Aspen Park	ASP	26137 Conifer Road
NPS - Rocky Mtn. NP	RMNP	Rocky Mountain National Park
Ft. Collins - West	FTCW	LaPorte Avenue & Overland Trail
* Rist Canyon	FTCR	11822 Rist Canyon Road
Ft. Collins - CSU	FTC	708 S. Mason Street
Greely - Weld Tower	GRET	3101 35th Avenue

* Rist Canyon site shut down on 6/28/2013

**C3: OZONE ACTION ALERTS
2000 – 2013**

	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
2010	15	10	10	35
2011	11	20	6	37
2012	13	19	10	42
2013	8	16	8	32
Average Per Month	8.4	16.1	6.1	30.0

C4: OZONE MONITORING DATA (PPB) SELECT CDPHE MONITORING SITES

2013 4th Maximum Ozone Values (ppb) through August 31st, 2013:

Monitor	2013	2013	2013	2013	2012	2011	2011-13
							Design Value
	1st	2nd	3rd	4th	4th	4th	Ave.
	Max	Max	Max	Max	Max	Max	
Welby	7/17/2013	8/29/2013	7/18/2013	8/17/2013			
	82	82	77	77	77	75	76
Highland	8/29/2013	6/13/2013	6/28/2013	8/17/2013			
	85	80	80	79	80	78	79
Aurora East	8/29/2013	7/18/2013	8/17/2013	5/31/2013			
	81	78	74	73	74	77	74
So. Bld Ck	7/17/2013	7/10/2013	7/11/2013	7/16/2013			
	86	81	80	79	76	76	77
CAMP*	7/10/2013	7/17/2013	8/29/2013	7/11/2013			
	74	72	69	67	68	N/A	N/A
La Casa**	7/10/2013	7/17/2013	7/11/2013	8/29/2013			
	80	79	72	71	N/A	N/A	N/A
Chatfield S.P.	8/29/2013	6/28/2013	7/18/2013	7/21/2013			
	86	85	83	83	86	82	83
Welch	7/17/2013	7/21/2013	8/17/2013	8/29/2013			
	84	80	80	80	79	77	78
RFN	7/17/2013	7/10/2013	8/17/2013	7/11/2013			
	93	87	86	85	84	81	83
NREL	7/17/2013	7/11/2013	8/17/2013	8/29/2013			
	90	86	84	84	81	83	82
Aspen Park	8/29/2013	6/12/2013	7/17/2013	7/18/2013			
	80	78	78	77	77	72	75
RMNP***	6/12/2013	7/17/2013	7/16/2013	6/20/2013			
	82	82	79	74	79	77	76
Fort Collins W.	7/17/2013	8/17/2013	7/11/2013	7/10/2013			
	91	87	85	82	80	80	80
FTCRistC****	6/12/2013	5/25/2013	5/17/2013	6/2/2013			
	70	68	67	66	71	73	70
Fort Collins	7/17/2013	8/17/2013	7/11/2013	7/10/2013			
	83	76	75	74	74	68	72
Greeley Tr.	8/17/2013	7/11/2013	8/16/2013	6/18/2013			
	80	74	74	73	80	77	76

2013 Data has been compared and harmonized with APCD TS Program through August 31st, 2013.

2013 data has not been formally QA'd.

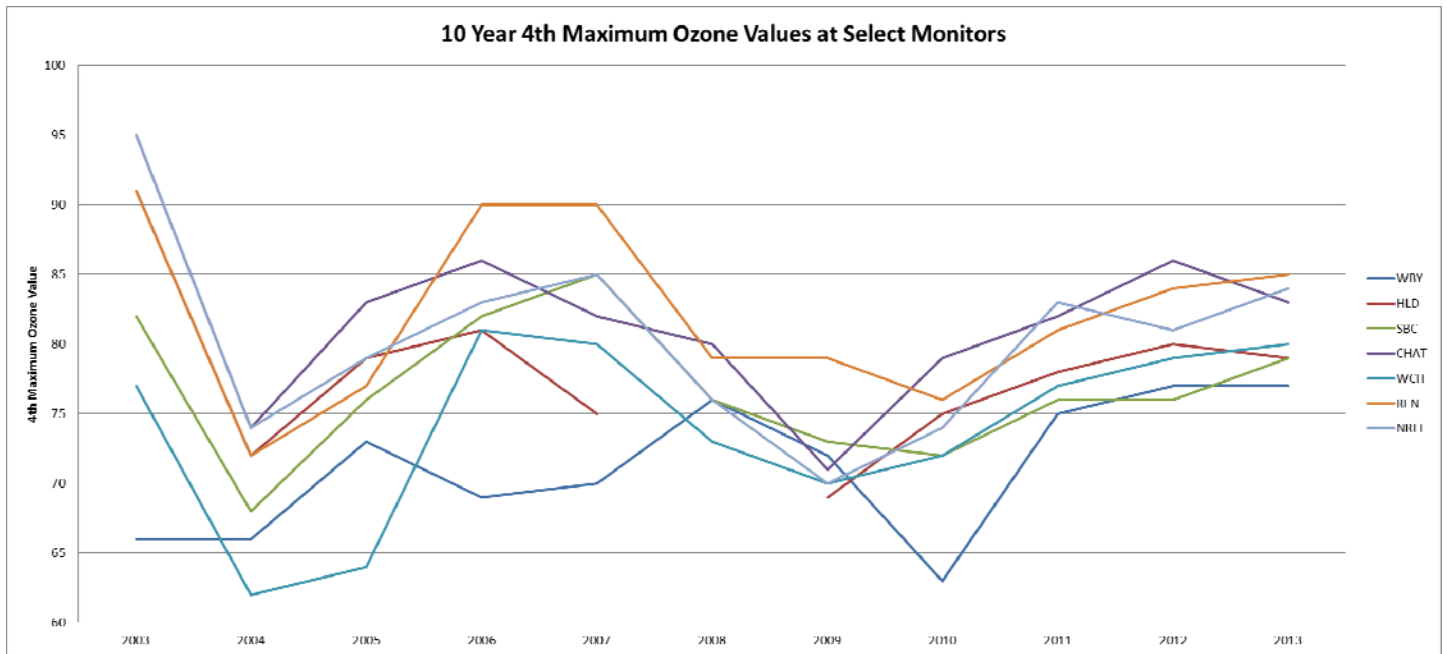
2011 and 2012 data have been formally QA'd.

76	Exceedance of new EPA standard 75 ppb
76	Violation of new EPA standard 75 ppb

*Camp is new in 2012 ** La Casa is new in 2013 ***RMNP data through August 31st, 2013

****FTCRistC data through June 30th, 2013

**C5: 10 YEARS OF 8-HOUR OZONE LEVELS
4TH HIGHEST MAXIMUM LEVELS (PPB)
SELECT CDPHE MONITORING SITES**



D1: CAMPAIGN SURVEY



CAMPAIGN RESEARCH FINDINGS

REGIONAL AIR QUALITY COUNCIL | 10.08.13



rabble + rouser



BACKGROUND

- In 2013, The Regional Air Quality Council conducted its annual summer educational campaign with Launch Advertising and rabble+rouser to inform residents of the Denver metro area about ozone pollution.
- This year the campaign included radio, billboard, TV, online, mobi, and social networking elements. Marketing efforts also included public relations and community events. Ads drove people to the OzoneAware website and online Ozometer.
- Pre- and post-campaign research was conducted to asses performance.



RESEARCH OBJECTIVES

- To evaluate the impact of RAQC's 2013 public education campaign on general issues and awareness of ozone pollution.
- To evaluate the impact of the campaign in its success at fostering behavioral change related to ozone pollution.



RESEARCH APPROACH

- In May 2013, we conducted pre-campaign research to assess baseline knowledge, awareness of ozone pollution, and current behaviors in the Denver metro area.
- In August 2013, post-campaign research was conducted to assess the impact of the campaign, utilizing the same survey instrument.
- We measured changes in public awareness and knowledge of the issue of ozone pollution in general. Additionally, specific awareness of the actions that individuals can do to help reduce ozone pollution, the 2013 campaign, its campaign elements, and changes in behavior between May and August 2013 were measured.



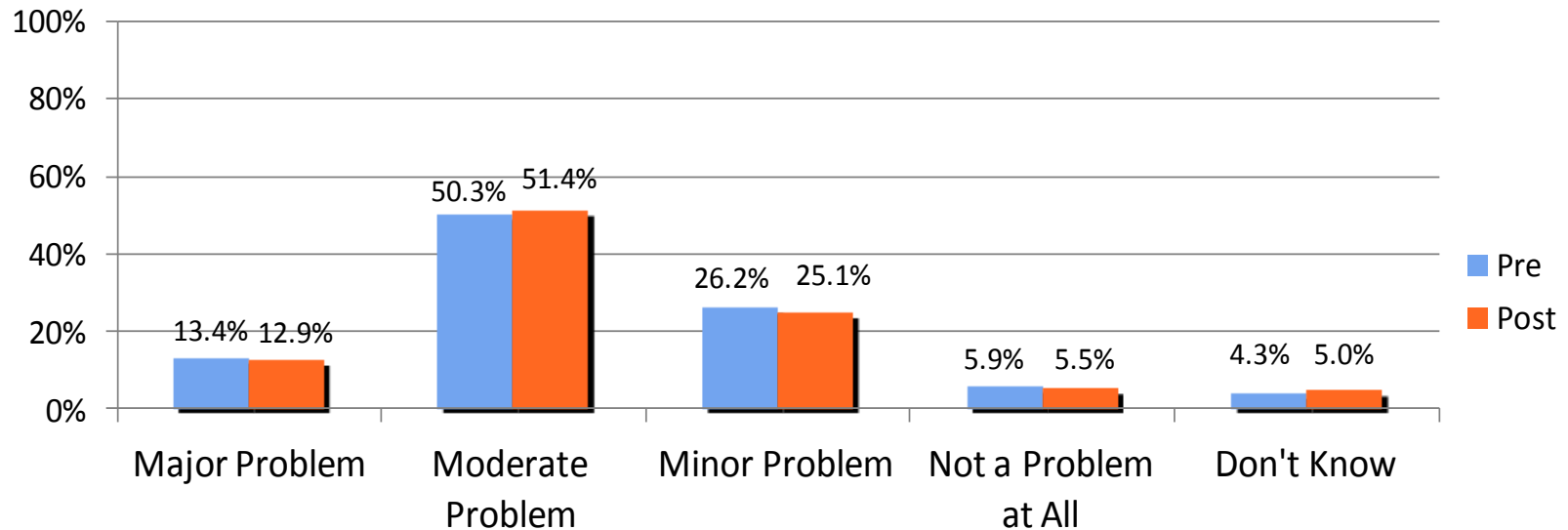
METHODOLOGY

- We surveyed a random sample of residents in the seven Denver metro counties: Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, and Jefferson.
- 16 questions in each online survey
- Pre-campaign online survey May 17–24, 2013
 - - n = 380 completes
- Post-campaign online survey August 23–26, 2013
 - - n = 433 completes
- Based on the sample size, the margin of error for the research is +/- 4.71 for the post-campaign data and +/- 5.03 percent for the pre-campaign data.

SURVEY RESULTS

AWARENESS OF AIR POLLUTION AS A PROBLEM

- Perceptions of air pollution as a problem remained steady throughout the campaign.
- In May, 89.9% of residents thought air pollution was a problem in the Denver metro area compared with 89.4% in August.*

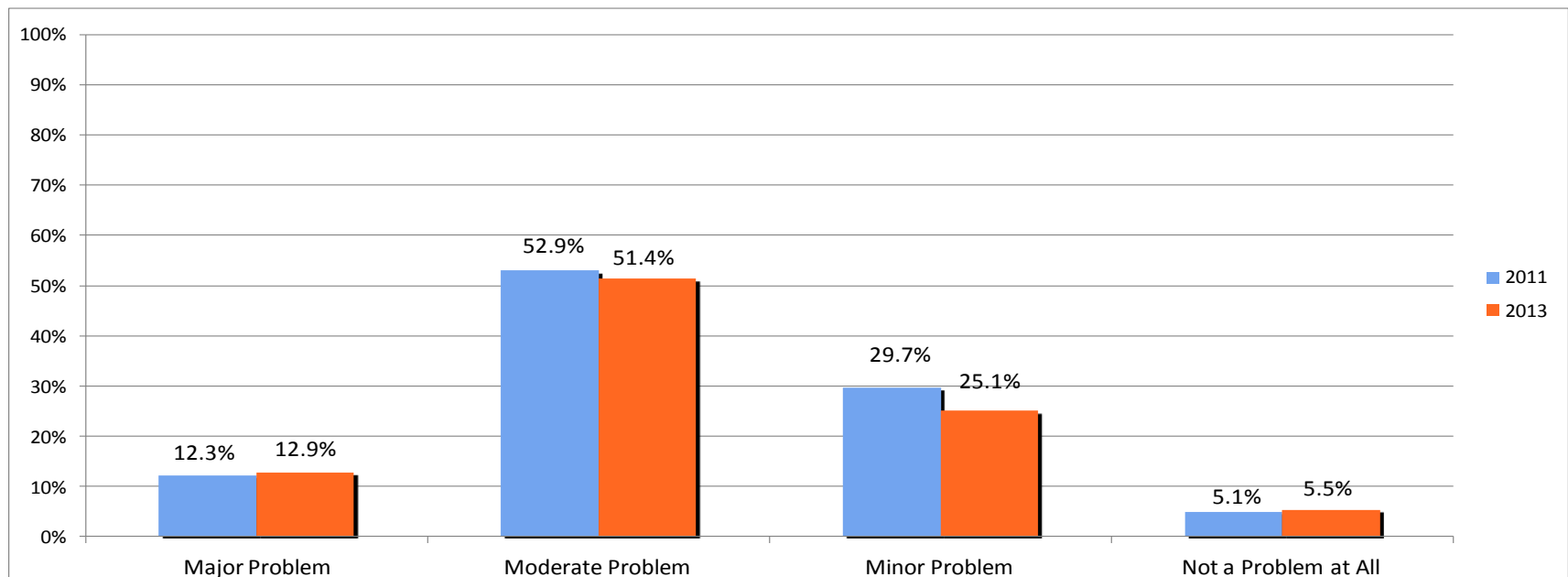


Q: How much of a problem is air pollution in the Denver area? (#2)

*Percentage includes "Major," "Moderate" and "Minor" Problem.

AWARENESS OF AIR POLLUTION AS A PROBLEM

- Perceptions of air pollution as a problem were similar to 2011 levels.

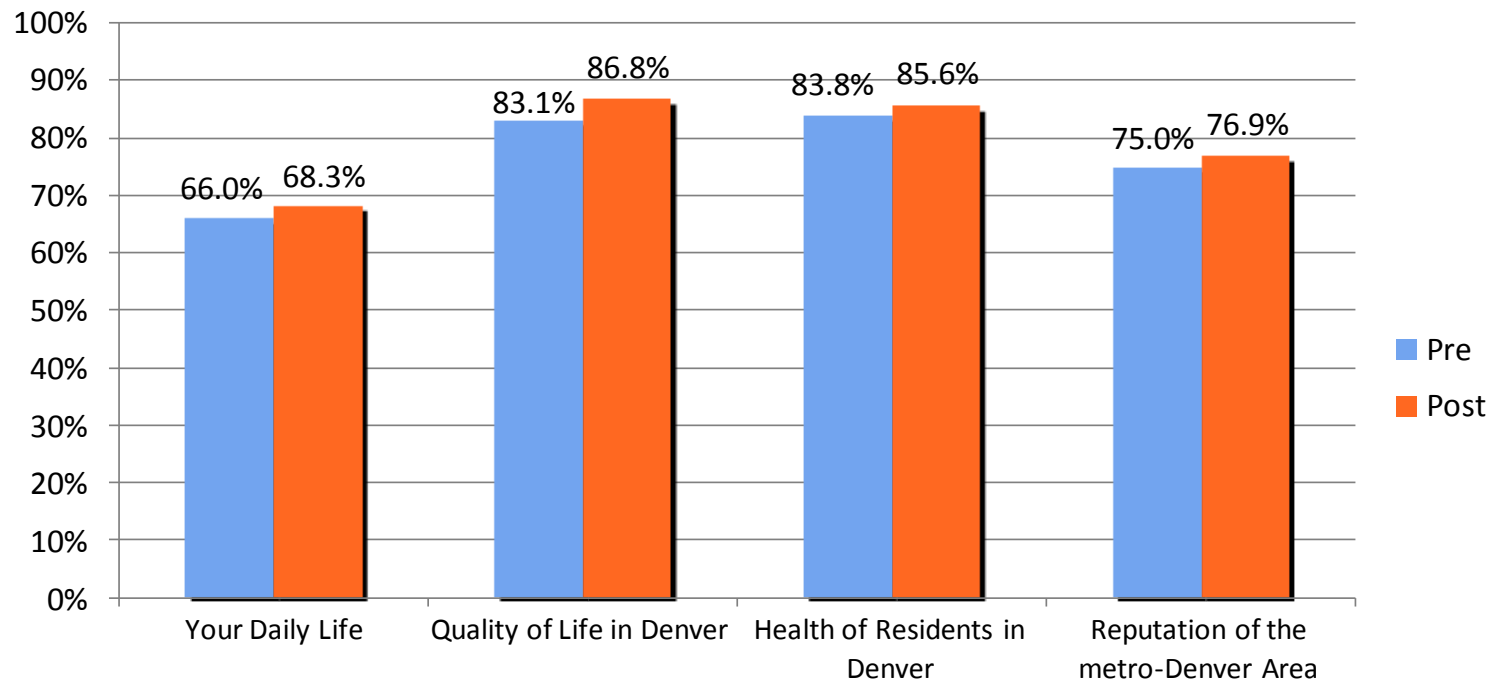


Q: How much of a problem is air pollution in the Denver area? (#2)

*In 2013, "Don't Know" accounted for 5% of the respondents to this question.

PERCEPTION OF AIR POLLUTION'S NEGATIVE IMPACTS

- Residents' perception of air pollution's negative impacts increased post-campaign.



Q: Please rate to what extent you think air pollution negatively affects the following. (#3)

*Graph combines "Major," "Moderate," and "Minor" Problem.

FAMILIARITY WITH GROUND-LEVEL OZONE

	Pre-Campaign	Post-Campaign	Increase
How familiar are you with the problem of ground-level ozone?* (#4)	58.7%	64.3%	5.6%
How much of a problem is ground level ozone?** (#5)	63.9%	70.6%	6.7%

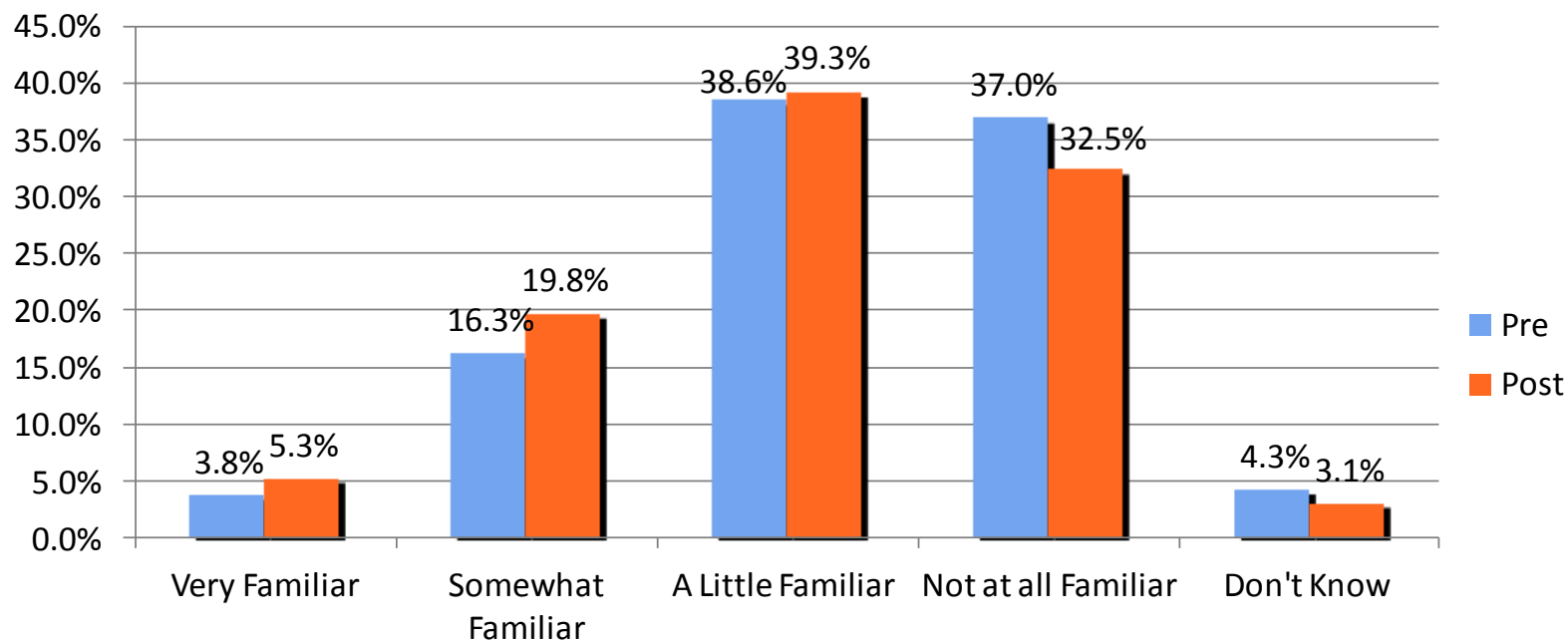
- Familiarity with the problem of ground-level ozone increased from 58.7% pre-campaign to 64.3% post-campaign—a 5.6% increase.
- The perception ground-level ozone as a problem increased from 63.9% pre-campaign to 70.6% post-campaign—a 6.7% increase.

*This statistic combines the responses “Very Familiar,” “Somewhat Familiar,” and “A Little Familiar.”

** This statistic combines “Major,” “Moderate,” and “Minor.”

FAMILIARITY WITH GROUND-LEVEL OZONE

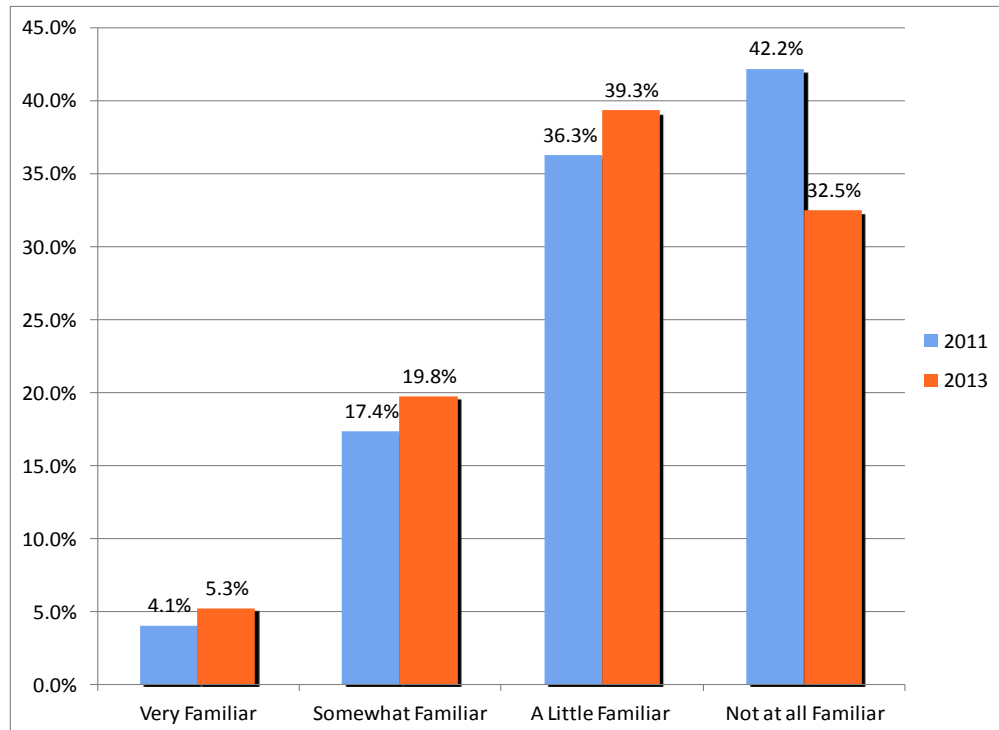
- There was a 3.5% increase in people who were “Somewhat Familiar.” Fewer people are “Not at all Familiar” or “Don’t know.”



Q: How familiar would you say you are with the problem of ground-level ozone? (#4)

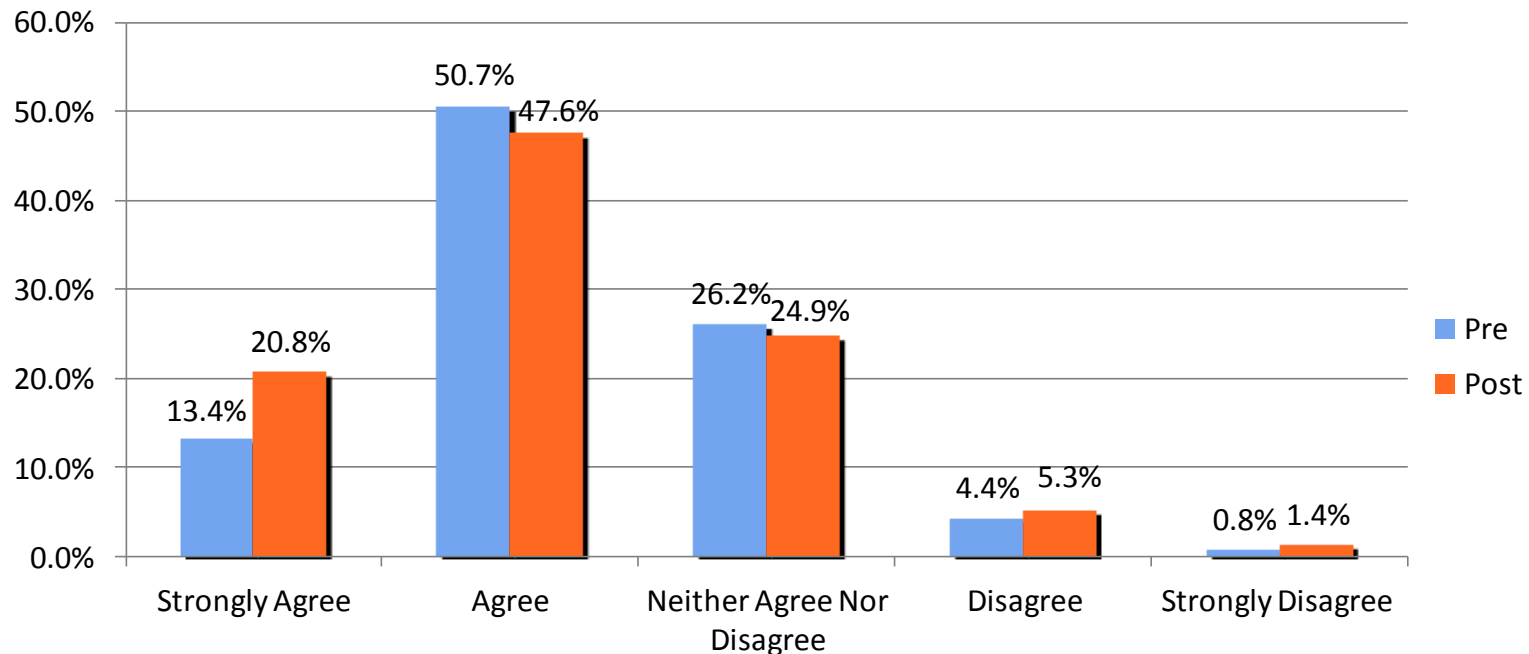
FAMILIARITY WITH GROUND-LEVEL OZONE 2011–2013

- There was an increase in respondents who indicated they were very familiar, somewhat familiar, or a little familiar with ground-level ozone from 2011 to 2013.
- There was a 9.7% decrease from 2011 to 2013 in those who were not at all familiar.



AWARENESS OF INDIVIDUAL ACTIONS AS A POSITIVE IMPACT ON OZONE POLLUTION

- There was a 7.4% increase in people who “strongly agree” that their individual actions can make a positive impact on ozone pollution post-campaign.



Q: Please indicate how much you agree or disagree with the following statement: "My individual actions can make a positive impact on ozone pollution this summer."? (#6)

AWARENESS OF CONTRIBUTORS TO OZONE POLLUTION

Contributor	Pre	Post	Change
Auto emissions	83.9%	85.9%	2.0%
Truck and bus emissions	85.8%	86.7%	.9%
Air conditioning	46.2%	43.7%	-2.5%
Gas-powered lawn equipment	80.6%	81.1%	.5%
Aerosol products	65.0%	68.2%	3.2%
Gasoline vapors	79.5%	79.9%	.3%
Vapors from paints, stains, solvents	67.5%	67.2%	-.3%
Dust particles	45.9%	40.3%	-5.6%

- Residents became more aware of auto emissions causing ground-level ozone post-campaign (85.9%).
- More residents believed aerosols are contributors (68.2%).
- 5.6% more people recognized that dust particles are NOT contributors.

Q: Please mark whether or not you think each of the following contributes to ground level ozone pollution. "Yes" response. (#7)

UNAIDED BEHAVIORAL AWARENESS OF REDUCING OZONE POLLUTION

Message	Pre-Campaign Responses	Post-Campaign Responses	Difference
Limit driving; mass transit	43.5%	46.7%	7.3%
Pump gas in evening and not on ozone days	3.6%	2.4%	-31.7%
Mow in evening	3.6%	12.5%	248.2%
Tune up car/maintain car	1.9%	2.7%	39.5%%
Reduce use of aerosols	5.0%	8.3%	67.6%%
Reduce carbon emissions	1.9%	3.2%	64.8%%
Reduce use of ozone pollutants	1.1%	2.2%	99.7%
Hybrid/electric cars; cleaner fuel	5.5%	2.4%	-55.6%
Reduce fireplace/wood burning	1.9%	1.0%	-49.3%
Fewer stops; reduce idling	2.2%	2.4%	10.9%

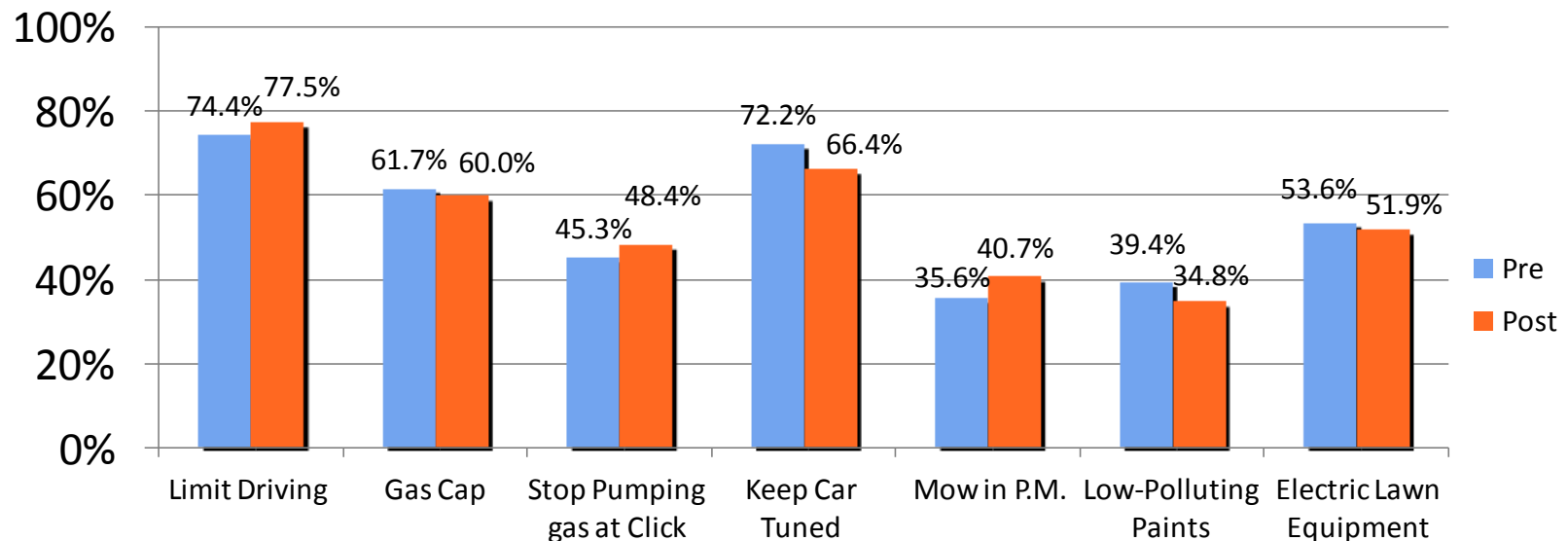
- For the most part, unaided awareness of specific actions that reduce ozone pollution increased.
- For example, the percent of respondents indicating that mowing in the evening can reduce ozone pollution increased 248.2%.

OZONE BEHAVIORS WORD CLOUD

Aerosol Cans Air Conditioning Burning **Carpool Drive**
Emissions Fuels **Gas** Gasoline Lawn Mower
Mow Ozone Plant **Pooling Products** Public Transit
Public Transportation Push Mower **Recycle**
Reduce Ride Solar Stop **Walk**

AIDED AWARENESS OF REDUCING OZONE POLLUTION

- Aided awareness of things you can do to reduce ozone pollution remained approximately the same.
- In particular, 5.2% more people are “Very Aware” of mowing after 5:00 p.m.
- 5.8% less people are “Very Aware” of keeping their car well-maintained.

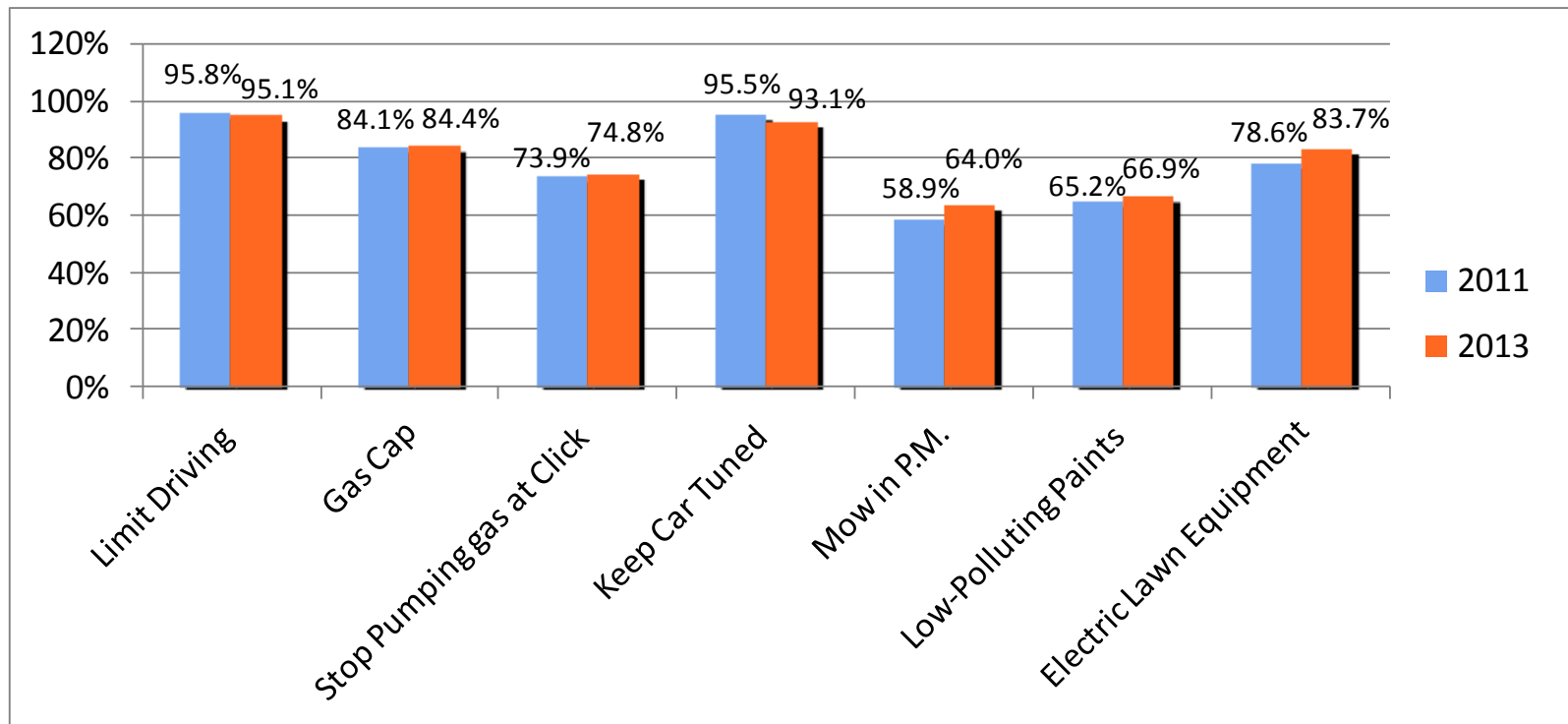


Q: How aware are you that the following things can help reduce ozone pollution? (#9)

*Graph shows those who are “Very Aware.”

AIDED AWARENESS OF REDUCING OZONE POLLUTION 2011–2013

- Aided awareness of things you can do to reduce ozone pollution remained approximately the same from 2011 to 2013.
- In particular, 5.1% more people are aware of mowing after 5:00 p.m. and 5.1% more people are aware of using electric lawn equipment.*

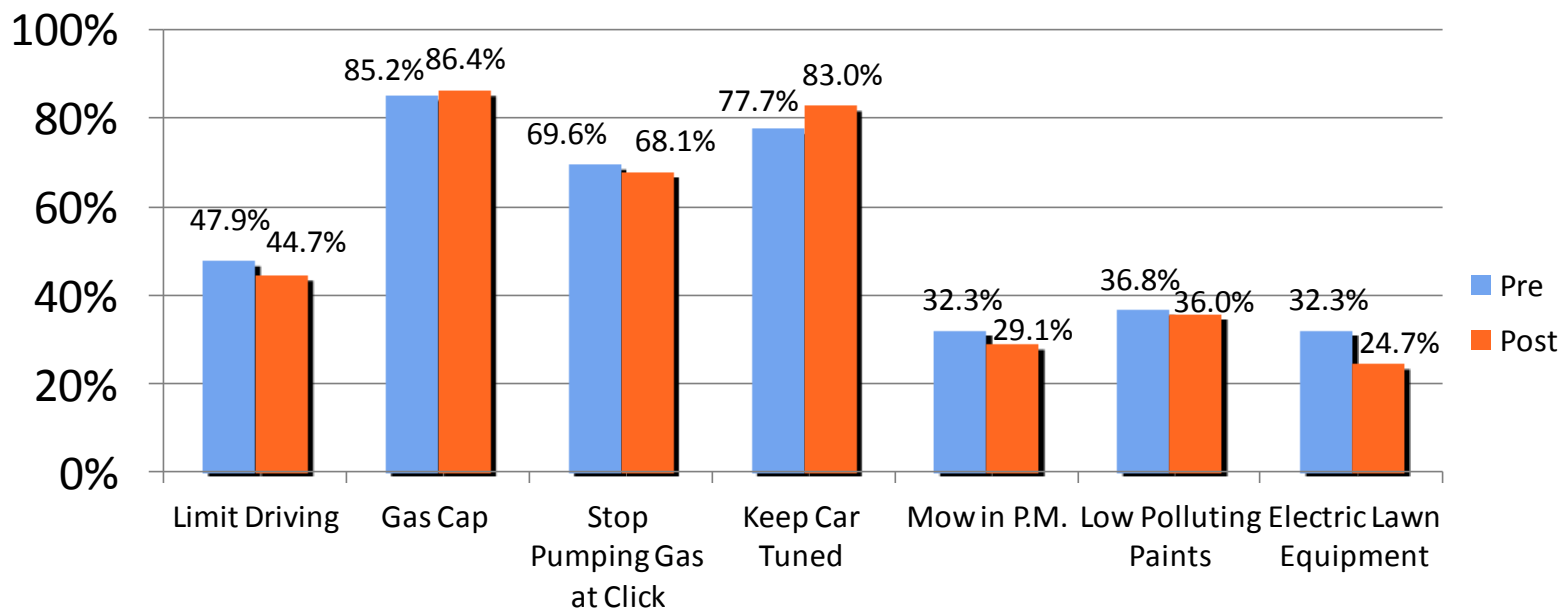


Q: How aware are you that the following things can help reduce ozone pollution? (#9)

*Graph shows those who are "Very Aware" and "Somewhat Aware."

CHANGE OF BEHAVIOR TO REDUCE OZONE POLLUTION

- Most people tighten their gas cap, stop pumping after click, and keep their car well-maintained.
- Behaviors remained steady, but 5.3% more people indicated keeping their car well-maintained, while 7.6% fewer people used electric lawn equipment.



Q: How often would you say that you do the following things to reduce the impact of ozone pollution? (#10)

*Graph combines "Almost Always" and "Often" response.

CAMPAIGN AWARENESS

Campaign Piece	Pre	Post	Impact
Ozone Action Alert	19.3%	22.8%	3.5%
Mow Down Pollution	12.6%	12.1%	- 0.4%
OzoneAware.org	12.6%	18.1%	5.5%
Pledge to Chill	8.9%	8.4%	-0.5%
Let's Take Care of Our Summer Air	15.9%	14.9%	-1.1%
Join Our Clean Air Community	17.9%	16.6%	- 1.3%
Take Five to Clear the Air	10.9%	11.4%	0.5%
Ozone Aware OzoMeter	9.8%	13.1%	3.3%

- Awareness of OzoneAware.org, Ozone Action Alert, and Ozone Aware OzoMeter increased.
- Note the 5.5% increase in awareness of OzoneAware.org.

Q: Please indicate if you are aware of any of the following air pollution programs or information sources. "Aware" response. (#11)

CAMPAIGN AWARENESS 2011–2013

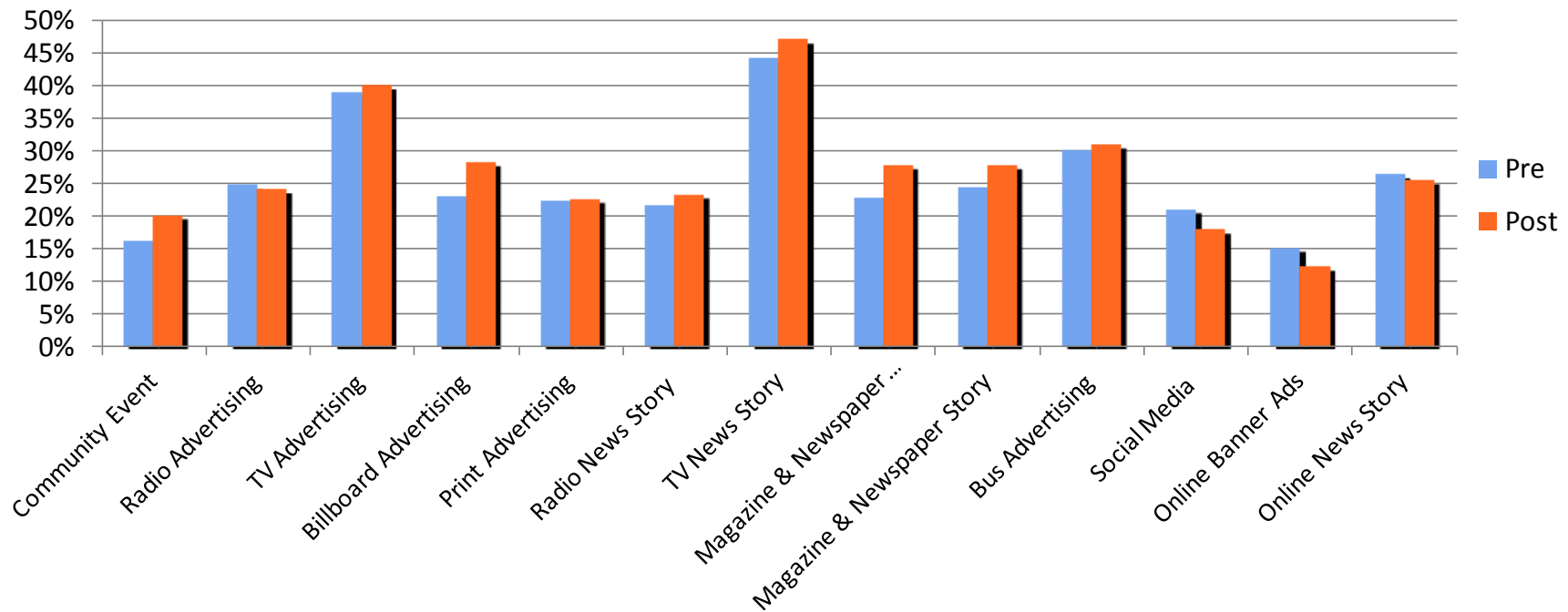
Campaign Piece	2011	2013	Impact
Ozone Action Alert	36.6%	22.8%	- 13.8%
Mow Down Pollution	7.1%	12.1%	5%
OzoneAware.org	15.4%	18.1%	2.7%
Pledge to Chill	3.4%	8.4%	5%
Let's Take Care of Our Summer Air	13.0%	14.9%	1.9%
Join Our Clean Air Community	12.5%	16.6%	4.1%

- Awareness of Ozone Action Alert decreased by 13.8%.
- Awareness of all other campaign elements increased.

Q: Please indicate if you are aware of any of the following air pollution programs or information sources. “Aware” response. (#11)

AWARENESS OF CAMPAIGN ELEMENTS

- Overall, TV News Stories, and TV Advertising are the most prominent.
- Awareness of ozone pollution programs by billboard advertising increased by 5.3%, and magazine and newspaper advertising increased by 5.1%



Q: Have you seen information on ozone pollution programs on any of the following formats? "Yes" response. (#12)

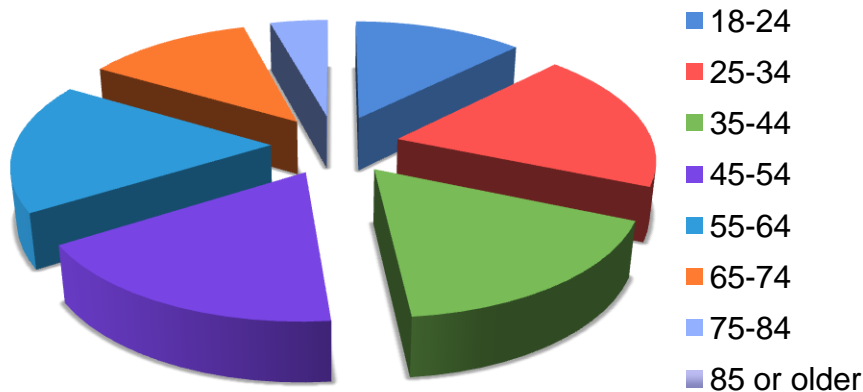
KEY TAKEAWAYS

All of the following increased post-campaign:

- Residents' perception of air pollution's negative impacts (small increases in all categories measured)
- Familiarity with the problem of ground level ozone (+5.6 percentage points) and the perception of ground level ozone as a problem (+6.7 percentage points)
- Residents who "Strongly Agree" that their individual actions can make a difference (+7.2 percentage points)
- Unaided awareness of specific actions that reduce ozone pollution (increases in almost all actions)
- Awareness of OzoneAware.org, Ozone Action Alert, and Ozone Aware OzoMeter (+5.5, +3.5, +3.3 percentage points respectively)
- Awareness of ozone pollution programs in billboard advertising (+5.3 percentage points) and magazine and newspaper advertising (+5.1 percentage points)

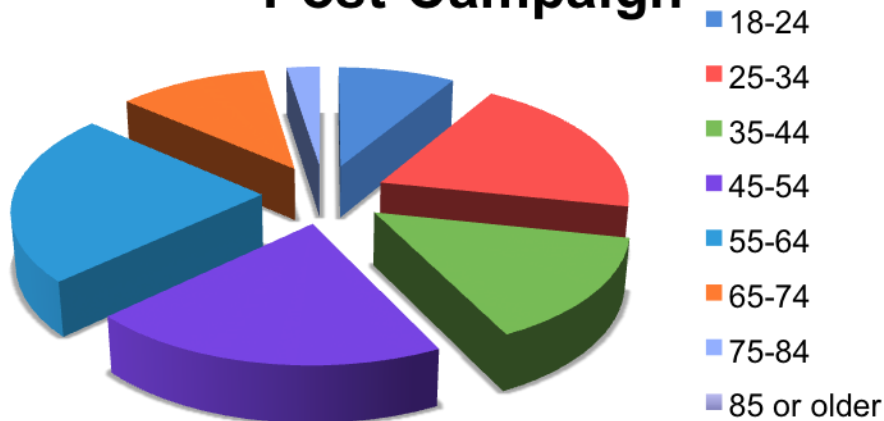
AGE OF RESPONDENTS

Pre-Campaign



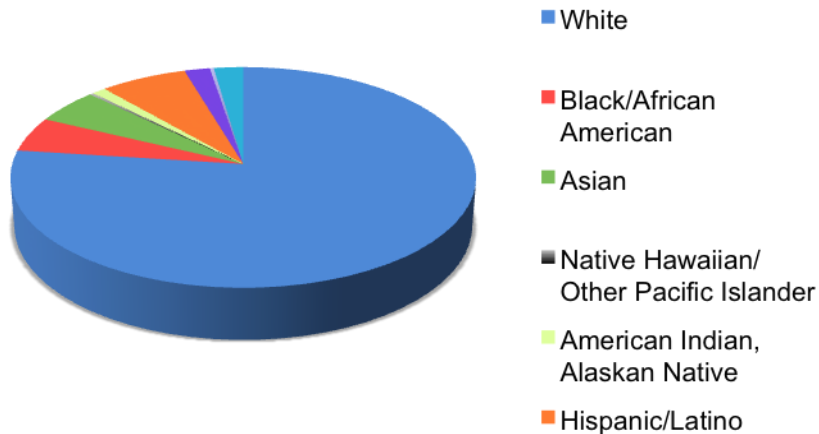
- The demographics of the respondents were mostly similar in the pre and post campaign surveys, except for a few statistically significant changes in age.
- There were fewer 18–24 year olds (4% point decrease) and more 55–64 year olds (6% point increase).

Post-Campaign

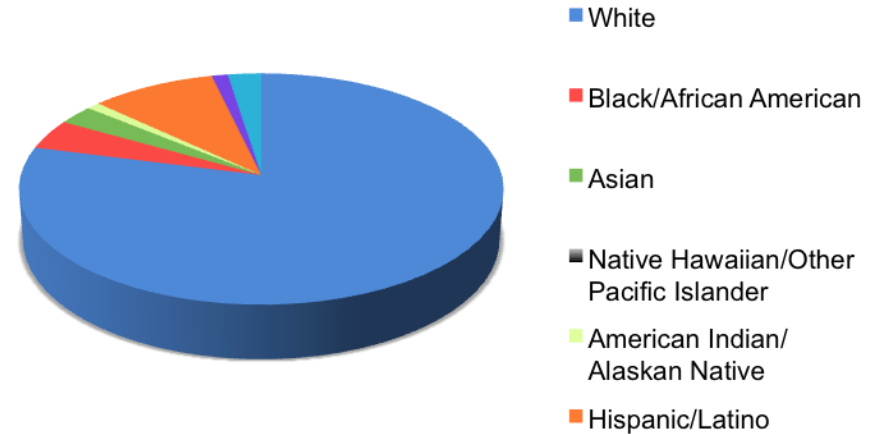


DEMOGRAPHICS

Ethnicity Pre-Campaign



Ethnicity Post-Campaign



Sex	Pre	Post
Male	37.3%	35.6%
Female	62.7%	64.4%

- There was no statistical change in the ethnicity or sex of the respondents pre- and post-campaign.

HOUSEHOLD DEMOGRAPHICS

Children under 18 at home	Pre	Post
Yes	32.5%	34.4%
No	67.5%	65.6%

Home Ownership	Pre	Post
Rent	44.4%	36.1%
Own	54.0%	62.9%

- There was no statistical change in the number of respondents who had children under the age of 18 at home.
- 8.9% more respondents owned their home in the post-campaign survey.