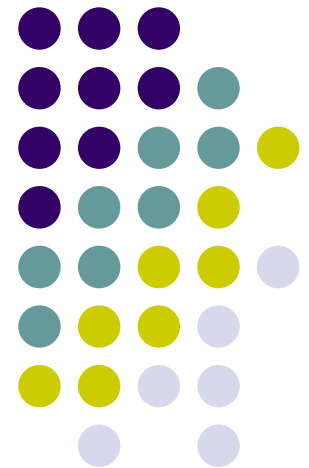


Air Exchange

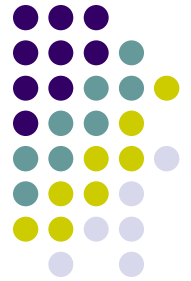
Presented by:
Regional Air Quality Council

Motor Vehicle Advisory Council

April 11, 2007



Regional Air Quality Council



- Formed in 1989 to serve as the lead air quality planning agency for the seven county Denver-metropolitan area
- The nine-member, Governor-appointed board consists of three local government reps, four business and citizen reps, and Exec. Dir. of CDOT and CDPHE



Mission

- Develop efficient and cost-effective air quality planning initiatives with input from:
 - Local governments
 - Private sector
 - Stakeholder groups
 - Citizens
- Primary tasks are to prepare implementation plans to show compliance with federal air quality standards and develop outreach/education programs



Criteria Pollutants

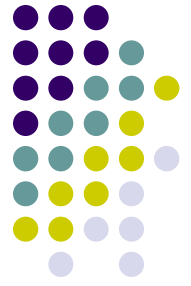
- RAQC is a regional planning agency with no regulatory or lobbying authority
- Works with the six common or “criteria” pollutants as defined by the U.S. EPA
 - Carbon Monoxide (CO)
 - Lead
 - Nitrogen Oxide (NO_x)
 - Ozone (O₃)
 - Particulate Matter (PM_{2.5} & PM₁₀)
 - Sulfur Dioxide (SO₂)



Air Quality Status

- Air quality governed by the National Ambient Air Quality Standards (NAAQS), set by U.S. EPA
- Intended to protect public health, especially sensitive and/or vulnerable populations
- Denver region is currently in compliance with all NAAQS after previously violating five of the six standards
 - Region reached historic achievement in 2002

Particulate Matter (PM₁₀/PM_{2.5})



- Airborne particles that can be inhaled, causing reduced lung function; recent EPA health study suggests PM_{2.5} is a likely carcinogen
- PM₁₀ (coarse): sources include windblown dust, unpaved roads, street sand, and crushing and grinding operations
 - No violations of the standard since 1993
- PM_{2.5} (fine): sources include motor vehicles, power generation, diesel emissions, and wood smoke
 - Major contributor to Denver's wintertime "Brown Cloud"
 - EPA tightened the standard in 2006 due to health concerns
 - No violations of the standard – new or old
 - Nationwide designations based on 2007-2009 data expected by 2010



Ozone (ground-level)

- Ozone is formed when volatile organic compounds (VOCs) combine with NO_x under heat and sunlight; this is a summertime pollutant
- Ozone can trigger attacks and symptoms in individuals with pre-existing health conditions, such as asthma or other respiratory infections
- 1-Hour Standard
 - No violation since 1988
 - The 1-hour standard was replaced with a new, stricter 8-hour standard
- 8-Hour Standard
 - Violations of the standard in 2000 and 2003
 - Region currently deferred nonattainment status
 - This summer will be a crucial year for ozone




Ozone Mitigation Efforts

- Regulatory
 - Early Action Compact for ozone
 - Partners include: EPA, CDPHE, DRCOG, RAQC, industry, North Front Range, CDOT
 - Federally enforceable
 - Regulates mobile, stationary, area, and point sources
 - The plan does not include a voluntary component
- Voluntary
 - Complement to regulatory programs
 - “Let’s Take Care of Our Summer Air”
 - Focus is on public awareness and education
 - Main goal is behavior change
 - Repair Your Air Campaign



Ozone Outreach Efforts

- Let's Take Care of our Summer Air (VOCs)
 - Ozone Advisory System
 - Partnership with CDPHE



LET'S TAKE CARE OF OUR SUMMER AIR.

OzoneAware.org



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: 303.758.4868
Media Inquiries: 303.540.5887 (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



Outreach Efforts

- Outreach
 - Media outreach and advertising
 - Local government outreach
 - Gas cap testing; gas can exchange
 - Citizen outreach (events and web site)
 - Mow Down Pollution
 - Chill campaign
 - Workshop April 25



CHILL. HANG. BE COOL.

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

The banner features a blue background with a white diamond containing a penguin icon on the left. The text 'CHILL. HANG. BE COOL.' is in large white letters. Below it, a red diamond with a white sun icon is followed by the text 'LET'S TAKE CARE OF OUR SUMMER AIR.' and the website 'OzoneAware.org'.



DON'T JUST BREATHE,
DO SOMETHING.

COME TO THE CITY AND COUNTY OF DENVER'S
OZONE AWARENESS FAIR

TUESDAY, AUGUST 30TH from 11:30 - 1:00
ATRIUM OF THE WELLINGTON E. WEBB
MUNICIPAL OFFICE BLDG AT 201 W. COLFAX AVE

Join Channel 7's Mike Nelson for a lunchtime ozone discussion and several air-friendly vendors to help you make a difference.
Have a question? Contact Heather Barry at heather.barry@cc.denver.co.us

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

The poster has a green background with a blue top section. It features a cartoon character with a surprised expression. The text is in white and yellow. At the bottom, there is a red diamond with a white sun icon and the text 'LET'S TAKE CARE OF OUR SUMMER AIR.' and 'OzoneAware.org'.



Outreach Efforts

- Research and analysis
 - Completed this year

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





Ozone Outreach

- Examples:

Front Range Air Quality
Noon 6/7/05



Poor Visibility
32 Max AQI
ALERT IN EFFECT

Click for more...

Front Range Air Quality
Noon 6/7/05



Good Visibility
55 Max AQI
No Alert in Effect

Click for more...

MOW IN THE EVENING.



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

TIGHTEN YOUR GAS CAP.



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

CHECK YOUR TIRE PRESSURE.



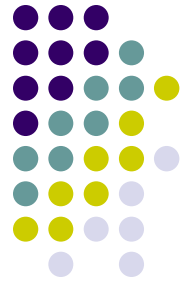
LET'S TAKE CARE OF OUR SUMMER AIR.
OzoneAware.org

RAQC Vehicle & Fleet Emissions Reduction Efforts



- **Background**
 - Outreach
 - Education
 - Program implementation

Diesel Emissions – The Status



- Congress and federal agencies have made reducing diesel emissions a national priority
- Diesel emissions are highly visible to the public and are likely hazardous to human health
- Reduce exposures to children, drivers, and parents, from idling buses/vehicles in neighborhood communities and school environments
- Emission reduction projects help significantly reduce fuel usage, helps save money!

Diesel Retrofit Project: What does it mean?



- **Diesel retrofit efforts include:**
 - Retrofit – installation of emissions reducing equipment
 - Refuel – utilizing a lesser polluting fuel (biodiesel, biodiesel blend, ultra low sulfur diesel)
 - Repair – maintain and repair damaged and high polluting fleet vehicles
 - Replace – replace older, high polluting vehicles with newer vehicles manufactured with pollution control devices



RAQC Diesel Projects

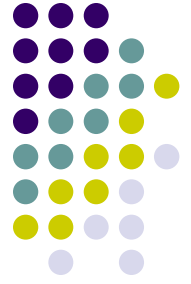
- RAQC has utilized retrofit projects to implement diesel emissions efforts throughout the metro-Denver region
 - Seek interested partners, apply for grant funding, if awarded, project is implemented and analyzed to determine best course of action for future projects
- School districts, local governments, and the private sector have partnered with the RAQC to implement several large-scale retrofit projects

Retrofit Equipment = Emissions Reductions



- Equipment that has been purchased and installed on partner diesel fleets include:
 - Diesel oxidation catalysts (DOC) - similar to a muffler replacement
 - Closed crankcase filtration unit
 - Engine pre-heaters
 - Diesel multistage filter
 - Diesel particulate filter
 - Biodiesel fuel (B20)
 - Ultra-low sulfur diesel fuel (ULSD)

RAQC School District Programs



- Clean Air Fleets

- School district project:

- Clean Yellow Fleets for Blue Skies (completed 2006)
- 15 Front Range school districts participated
- 800 school buses received retrofit equipment

- Clean Yellow Fleets for Blue Skies – Phase II (current)
- 11 School districts are participating
- \$950k awarded for purchase of retrofit equipment

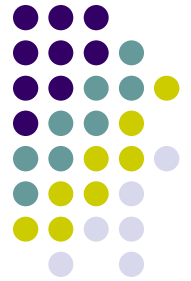
School / Municipality Retrofit Programs: Statewide Expansion



RAQC partnered with CDPHE to implement two projects in the Pueblo area

- First effort included partnering with Pueblo School District 60 & 70 – installation of diesel retrofit equipment
- Second effort includes working with Pueblo School Districts and Pueblo Municipal Fleet – installation of diesel retrofit equipment

RAQC Local Government Programs



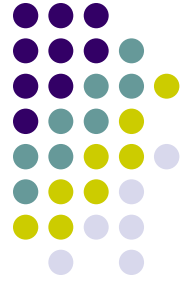
- Colorado Retrofit Project (CORP)
 - 13 Colorado counties, municipalities and CDOT have partnered (current project) together to implement large-scale retrofit project
 - CMAQ awarded \$1.45M for purchase of retrofit equipment
 - Primarily an idle reduction project – includes installation of engine pre-heaters and educational component to educate drivers on the impacts of excessive idling



Reaching the Private Sector

- Diesel Initiative for Retrofit Technology (D.I.R.T)
 - Partnered with Brannen Sand and Gravel, Inc. as well as Commerce City to install emissions reducing equipment on off-road vehicles
- Rocky Mountain Clean Diesel Collaborative
 - Partnership between RAQC, CDPHE, EPA and City and County of Denver
 - Mission is to educate public on funding, projects and initiatives relating to decreasing diesel emissions
 - Information on Collaborative is available on www.CleanAirFleets.org

Vehicle Emission Reduction Initiatives



- Repair Your Air Campaign
 - Started in 2002, scheduled to continue through 2008
 - Vehicle identification and repair program utilizing remote-sensing through Envirotech's RapidScreen Program
 - Repaired ~350 high-emitting vehicles
 - Emphasis on educating the public on the importance of regular vehicle maintenance to reduce vehicle emissions from poorly maintained vehicles
 - Most common problems are spark plugs and oil changes



How to get involved

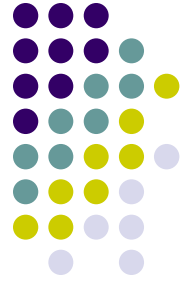
- Partner
 - If you are interested in a particular project related to air quality, contact the RAQC about partnership opportunities
- Email
 - Forward an informational email about any of our programs to employees, colleagues, friends, and family (we can help develop)
 - Sign up to receive air quality advisories
 - Ozone Alerts
 - High Pollution Season
- Write
 - Place an article about any of our programs in an employee newsletter or community paper



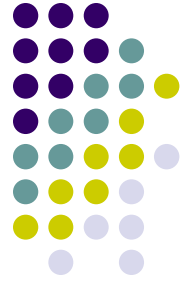
How to get involved

- **Chill**
 - Request that employees pledge to “chill” to reduce ozone pollution
- **Event**
 - Host an environmental event and invite organizations to distribute information
 - Host a gas cap testing and replacement fair
- **Web Site**
 - Put up a link to a RAQC web site on your web site
 - Put up a link to the “chill” pledge on your web site

Things you can do

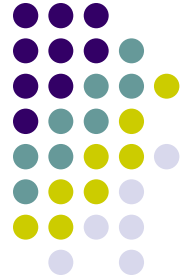


- Commit to practicing and promoting healthy air quality behaviors
- Don't idle your vehicle, fill up your tank after 5 pm, regularly maintain your vehicle, purchase earth-friendly lawn equipment, walk or bike when possible, etc.



Web sites

- RAQC general: www.raqc.org
- Diesel: www.CleanAirFleets.org
- Ozone: www.OzoneAware.org
- Repair Your Air: www.RepairYourAir.org



Contact Information

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