

Ground-Level Ozone and What You Can Do About It

KSU Pollution Prevention Institute
Lunch-n-Learn
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Clear Thinking. Clear Air.

AirQ

Overview

- Background on ozone
- Status under current ozone standard
- March 2008 revision of ozone standard
- Current pollution control strategies
- What you can do

What is MARC?

- Association of city and county governments and the metropolitan planning organization for the bi-state Kansas City region
- Represent 9 counties & 120 cities
- Help local governments coordinate on issues that cross political boundaries
- Program areas include transportation, environment, emergency services, childcare and services for the elderly

Ground-Level Ozone

- Chemically identical to upper-level ozone, BUT
- At ground level, is a man-made pollutant; hurts respiratory system
- Ozone not emitted directly - chem. reaction involving **volatile organic compounds (VOC)** and **nitrogen oxides (NO_x)**



Ozone Basics

- VOCs, NOX come from cars, trucks, small businesses, utilities & large industry
- GLO concentrations typically highest on warm, sunny days
- Can trigger breathing problems, esp in those who have asthma, emphysema, or other respiratory conditions

2002 Kansas City Metro VOC Emissions

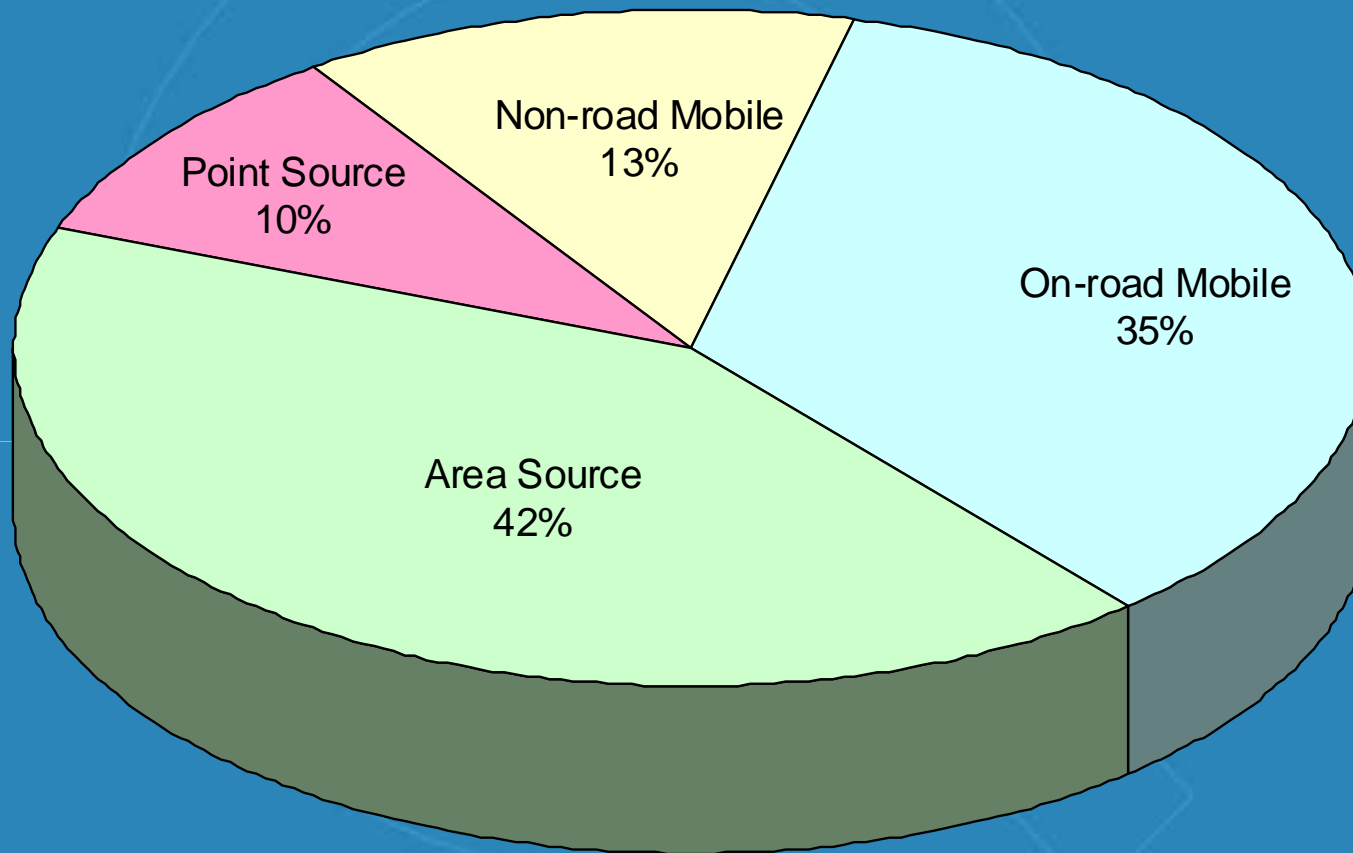


Chart courtesy of the KDHE Bureau of Air & Radiation

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2002 Kansas City Metro NOx Emissions

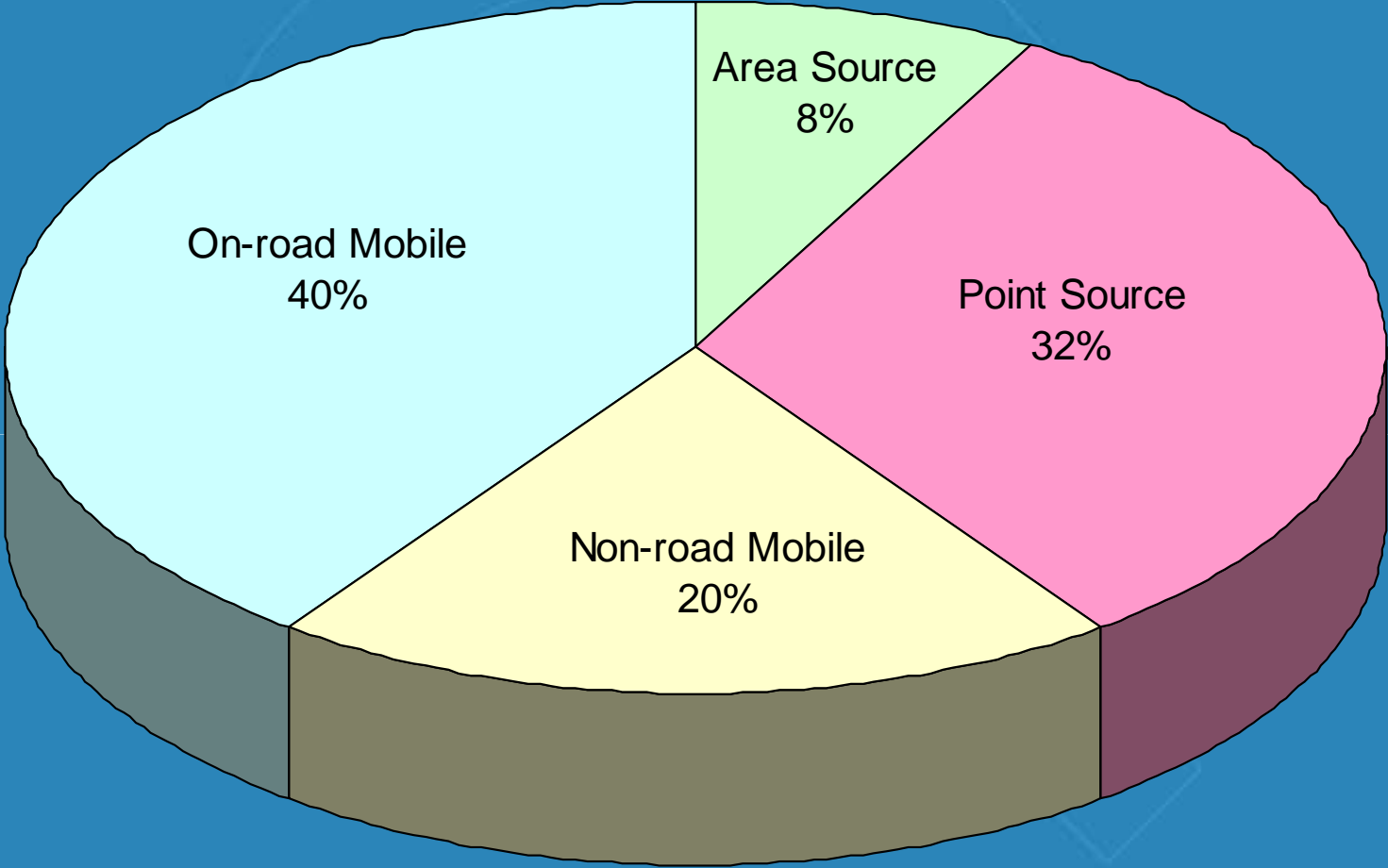


Chart courtesy of the KDHE Bureau of Air & Radiation

Current Standard

- In place since 2004
- Standard is 84 ppb averaged over 8 hrs
- Violation occurs if 3-year average of 4th highest reading from any monitor >84 ppb
- Violation at even one monitor puts whole region into violation

2007 Violations

- It's official: 2007 violations showed Kansas Citians are breathing unhealthy air
- Three area monitors did not meet standard:
 - Liberty (87 ppb)
 - Rocky Creek (87 ppb)
 - Trimble (85 ppb)

2003-07 Fourth-High Values & 2005-07 Design Values

Fourth-High Eight-Hour Values

Design Values

<i>Missouri</i>	2003	2004	2005	2006	2007		03-05	04-06	05-07
Liberty	88	71	88	93	81		82	84	87
Watkins Mill	85	67	79	91	73		77	79	81
Rocky Creek	88	69	87	87	89		81	81	87
Richards-Gebaur	82	61	81	78	72		74	73	77
Trimble*		71	87	85	83		n/a	81	85

Kansas

JFK (KCK)	84	63	79	81	73		75	74	77
Heritage Park	81	66	81	76	71		76	74	76
Leavenworth*	82	67	77	73	80		75	72	77

EPA Ozone Standard Revision

- EPA issued new ozone standard March 12, 2008
- Current standard is 84 ppb; new one is 75 ppb
- EPA revised standard to better protect public health
- Health is the sole consideration for setting primary air standards

What's Being Done?

- Regulatory plans already in place for 84 ppb standard
- Region has regulated VOCs for many years but not NO_x
- KS and MO are requiring new power plant controls following violations
- States are also drafting diesel idling regs in response to violations

Clean Air Action Plan

- Completed 2005
- Comprehensive voluntary plan for reducing emissions
- Four main elements:
 - Power plant controls
 - Diesel emissions reduction strategies
 - Public education
 - Long-term sustainability measures



What You Can Do!

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AirQ Workplace Partnership

- Over half of ground-level ozone comes from everyday people doing everyday things
- Workplaces are a good place to reach individuals
 - Small changes to everyday habits lead to large impact
 - People are “ready to learn”
 - Most accessible for Ozone Alerts

How does the Air Quality Workplace Initiative work?

- Appoint an AirQ Coordinator
 - Our point of contact
- Make plans
 - Ozone Alert days
 - Everyday Air Quality plan
- Participate in additional opportunities



Ozone Alerts

- MARC issues Ozone Alert when air quality is predicted to be unhealthy
- Based on model
 - Weather data
 - Pollution data
- Issued throughout the area
 - KC Star, TV meteorologists, KC Scout signs, alert list, EPA's AirNow, Workplace Initiative
- Purpose: Ask residents to
 - Protect health
 - Help reduce ozone concentration



Ozone Alerts

- Historically ~10 days/yr; under new AQI may be closer to ~25 days/yr
- Ozone Alerts issued by 3:00 p.m. on the day before the predicted ozone event
- Ozone Alert is emailed to AirQ Coordinators
- AirQ Coordinators relay Ozone Alert to the rest of the company

Ozone Alert Day Plan

- How will Ozone Alerts be relayed?
 - Email
 - Bulletin board
 - Other (P.A., monitors, elevators)
- Will the company have a special Ozone Alert policy?
 - Postpone mowing or refueling
 - Postpone painting or solvent use
 - Strongly encourage teleconferencing or carpooling
- Will the company provide other Ozone Alert day incentives to reduce emissions?
 - Rewards for alternative commute
 - Sponsor lunch or special lunch activity
 - Telecommute option

Everyday AirQ Actions

- AirQ Workplace Updates
- Use of educational materials
- Implementing additional clean air strategies, e.g.,
 - Preferred parking for carpoolers
 - Free or discounted transit passes
 - Have lunch brought in on Ozone Alert days.

Workplace Updates

- Bi-monthly tips on saving emissions
 - Health benefit
 - Financial benefit
 - Time benefit
- Sent to AirQ Coordinator as email
- Re-distributed
 - Email
 - Newsletter
 - Bulletin board

Workplace Updates



Workplace Update

Improve Your Indoor AirQ: Spring Cleaning

It's that time of year! You can open your windows to enjoy the warm breeze and spring rains — and start making plans to do a little spring cleaning. As you prepare to clear away the grime, keep in mind these tips to clear the air, as well:

- **Ventilate:** Indoor air quality can often be much worse than outdoor air quality. Pollutants can accumulate in your house, so ventilating regularly through natural or mechanical means (such as fans and ventilation systems) can help diffuse or rid your house of accumulated indoor air pollutants.
- **Change old filters:** Don't recirculate indoor air pollutants that have built up over the winter months. Remember to replace or clean the filters in your vents, air conditioning units, dehumidifiers, air purifiers and vacuum cleaners.
- **Use low or no-VOC (volatile organic compounds) paints:** If your spring cleaning also involves painting, choose low or no-VOC paints. These are usually water-based latex paints that pollute less and clean up easier than oil-based paints or varnishes.
- **Use safe alternatives for cleaning:** Many commercial cleaning products are high in VOCs and can emit toxic chemicals even while sitting under your sink. Try using alternatives to synthetic cleaners by opting for biodegradable cleaning products — or make your own cleaning products out of common household ingredients such as baking soda, lemon juice and borax. Visit <http://www.marc.org/Environment/SolidWaste/HHW/saferalt.htm> for some simple, safe recipes for alternative household cleaners.

Educational Materials

- Posters to hang in common areas
- Factsheets

FACT:
If each person in Greater Kansas City drove one less mile per week, we would prevent 23,835 tons of smog-forming pollutants from entering our air each year.



**One region.
Many choices.**

The above photographs are actual images of our downtown area on good and poor air quality days. Nearly half of all smog-forming pollutants come from the daily activities of the nearly 1.14 million people living in our region. Good choices equal clean air — and clean air equals healthy citizens.

**Clear Air. Clear Thinking.
It's in your hands.**

To learn more, visit
www.marc.org/airq



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Additional Clean Air Strategies

- Select a strategy or set of strategies that fit with your business
 - “Best bet” is something that integrates well with current practices
- Evaluate the benefits of the strategy
 - Emissions
 - Cost
 - Employee welfare
 - Congruence with company vision
 - Corporate responsibility
- Implement
 - Includes education about rationale
- Evaluate success
- Go on to next strategy

Everyday Air Quality strategy example

- *Company policy:* The last employee to leave should turn out the lights
- *Revised company policy:* All non-essential equipment should be turned off at the end of the day.
- *Financial benefit:* Managing power for 250 computers and monitors = savings of \$11,979.69 per year (assume 7.1 cents per kWh)
- *Emissions benefit:* 253 lbs of NO_x, 121 tons of CO₂



Additional Opportunities

- Gas cap testing event
- RideShare event
- Brownbag seminar
- Green Commute Challenge
- AirQ Haiku

Promotion of AirQ Partners - Workplaces that are making a difference

- Ads in Kansas City Business Journal, KC Small Business Monthly
- Website listing
- Other media opportunities



Thank you!

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