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Kansas City Area Ozone Designation Process Meeting

November 6, 2008



Presented by Doug Watson & Thomas Gross



Presentation Overview

- Designation process review
- MIRA tool use and results
- County-by-County Summary
- Next Steps



EPA's New Ozone Standard

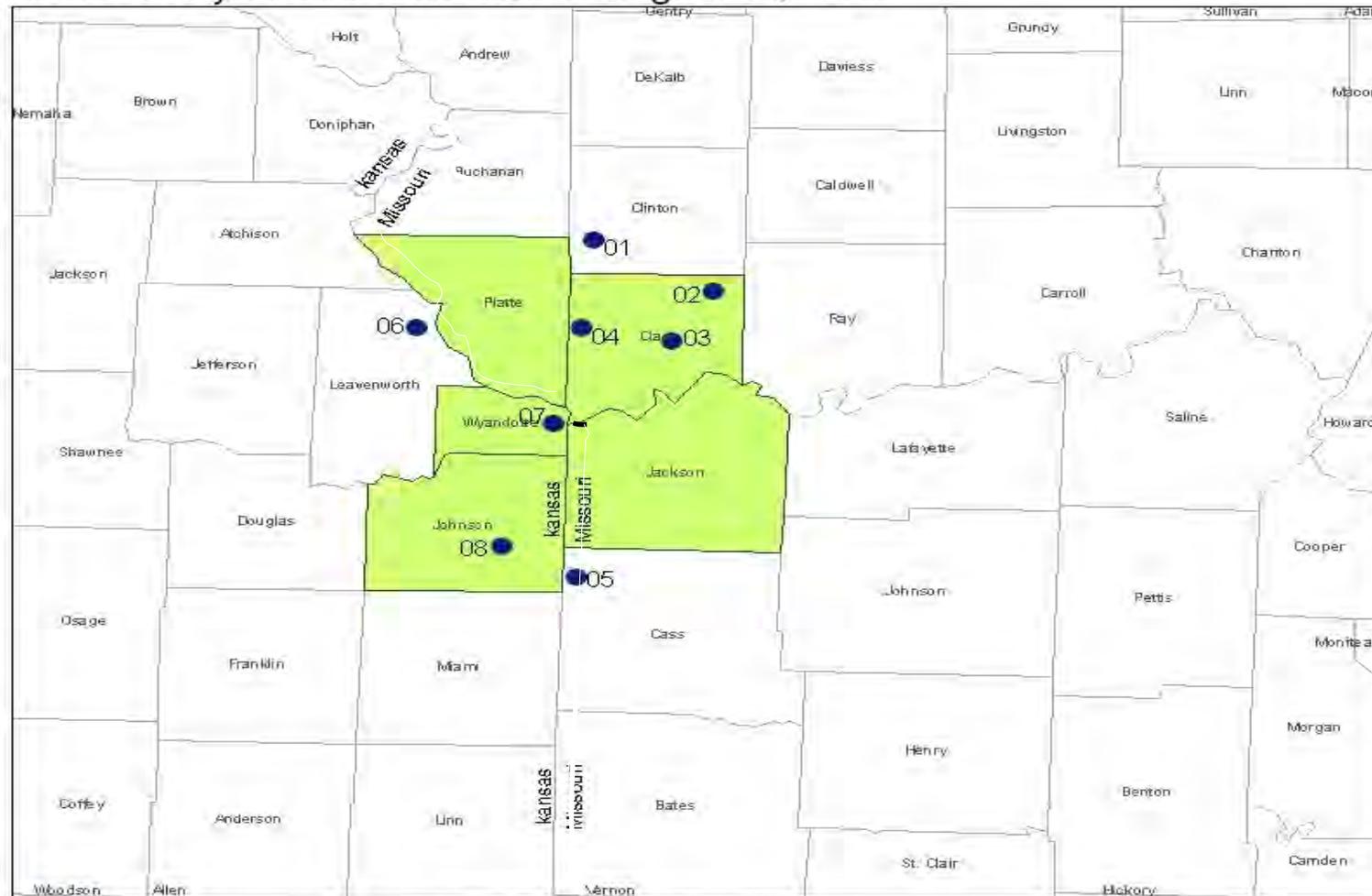
- Primary standard – 75 ppb
- Secondary standard – 75 ppb
- No rounding
- Area meets the new standard if design value is less than or equal to 75 ppb

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Kansas City Monitor Locations

Kansas City Area Ozone Monitoring Sites, 2007



- Missouri**
- 01 Trimble
 - 02 Watkins Mill State Park
 - 03 Liberty
 - 04 Rocky Creek
 - 05 RG-South
- Kansas**
- 06 US Penitentiary
 - 07 JFK-Core
 - 08 Heritage Park



Boundary Recommendation Principles

- Does a monitor in a county violate the standard?
- Do emission sources in a county contribute to violations of the ozone standard in “nearby” areas?
- Eleven criteria flow from these two principles

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Eleven Designation Criteria

- Emissions and air quality in adjacent areas
- Population density and degree of urbanization
- Ozone monitoring data in surrounding area
- Location of emission sources
- Traffic and commuting patterns
- Expected growth (extent, pattern and rate)
- Meteorology (weather and transport patterns)
- Geography/topography
- Jurisdictional boundaries
- Level of control of emission sources
- Regional emission reductions

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What is MIRA?

- Multi-Criteria Resource Assessment tool
- Developed by EPA Region III
- Designed to rank elements of environmental sets
- Can include large numbers of diverse criteria
- Includes data, expert opinions and value judgment
- Transparent
- Used to reveal the rationale or justification for a decision

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MIRA: General Approach

- Define the question
- Establish problem set: in this case the geographic area
- Establish decision criteria
 - Environmental, social, economic, etc.
 - Quantitative and/or qualitative
- Construct decision tree and weightings

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First Level Weighting

● Air Quality	25%
● Emissions	30%
● Commute Connectivity	10%
● Jurisdiction	15%
● Total Population	20%

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Second Level Weighting

● Air Quality

- Magnitude 85%
- Uncertainty 10%
- Att/Non-Att 5%

● Emissions

- Magnitude 70%
- Growth 30%

● Population

- Total Population 50%
- Population Density 50%

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Third Level Weighting

● Emissions Magnitude

- NOx Emissions 60%
- VOC Emissions 40%

● Growth

- VMT Growth 40%
- Pop. Growth 60%

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Fourth Level Weighting

● NOx Emissions

- Total Emissions 50%
- Emissions Density 50%

● VOC Emissions

- Total Emissions 50%
- Emissions Density 50%

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Fifth Level Weighting

● NOx Total Emissions

- Point 33%
- Area 33%
- Mobile 34%

● VOC Total Emissions

- Point 33%
- Area 34%
- Mobile 33%

● NOx Emissions Density

- Point 25%
- Area 40%
- Mobile 35%

● VOC Emissions Density

- Point 25%
- Area 40%
- Mobile 35%

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MIRA Final Results

County	Criteria Sum	Bin
Jackson	5.89	1
Clay	5.70	2
Johnson	5.59	2
Platte	4.94	4
Wyandotte	4.77	5
Cass	4.26	7
Clinton	4.04	7
Douglas	3.99	7
Leavenworth	3.95	8
Lafayette	3.63	9
Miami	3.63	9
Ray	3.34	9
Franklin	3.29	10
Caldwell	3.19	10
Linn	3.08	10
Bates	3.02	10

Approach / Issues

- 2008 Ozone season made task much more difficult
- MIRA was part of the decision-making process
- Caused us to return to 2 basic principles
 - Does county have a violating monitor?
 - Does county contribute?

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Linn County

- Mine Creek monitor below standard (0.070 ppm)
 - Small population (9,767)
 - Second largest source of NO_x emissions (32,783 tons) in MSA
 - KCP&L's La Cygne 29,100 tons prior to controls
 - Unit 1 – SCR
 - Unit 2 – Low NO_x Burners
- } Reduced to
18, 247 tons
- Low emissions from VOCs (1,269 tons) and transportation (410,000 VMT)
 - Meteorological analysis supports moderate contribution
 - Currently not part of KC Maintenance Area
 - KDHE will recommend attainment designation

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Franklin County

- No ozone monitor
- Relatively small population (26,479) and emissions from transportation (1,180,000 VMT)
- 11th in MSA for NO_x (2,868 tons)
- 9th in MSA for VOCs (1,818 tons)
- Meteorological analysis supports moderate contribution
- Not part of KC Maintenance Area
- KDHE will recommend attainment/unclassifiable designation

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Miami County

- No ozone monitor
- Relatively small population (31,078) and transportation emissions (847,000 VMT)
- 7th in MSA for NO_x (7,539 tons)
- 10th in MSA for VOCs (1,768 tons)
- Meteorological analysis supports moderate contribution
- Not part of KC Maintenance Area
- KDHE will recommend attainment/unclassifiable designation

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Leavenworth County

- Leavenworth monitor below standard (0.072 ppm)
- Moderate population (73,603) and contributor of transportation emissions (1,790,000 VMT)
- 12th in MSA for NO_x (2,800 tons)
- 7th in MSA for VOCs (2,777 tons)
- Meteorological analysis supports limited contribution
- Not part of KC Maintenance Area
- KDHE will recommend attainment designation

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Douglas County

- No monitor in 2006-2008 ozone season
- Large population (113,488)
 - Projected to grow 27% from 2000 to 2020
- Moderate emissions: NOx (8,955 tons), VOCs (5,719 tons) and transportation (2,262,000 VMT)
- Meteorological analysis supports limited contribution
- Is it's own MSA
- KDHE will recommend attainment/unclassifiable designation

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Wyandotte County

- JFK monitor meets standard (0.072ppm)
- Large population (157,882) contributing 1,712,000 VMT
- 4th largest contributor in MSA for NO_x (14,695 tons)
- 4th in MSA for VOC emissions (10,786 tons)
- Meteorological analysis supports frequent contribution
- Currently part of KC Maintenance Area
- KDHE will recommend nonattainment designation

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Johnson County

- Heritage Park Monitor meets standard (0.069 ppm)
- Very large population (526,319)
 - Projected to grow 55% from 2000 to 2020
- Highest average daily VMT for Kansas Counties (14,101,000)
 - Projected to grow 33% from 2005 to 2020
- 2nd largest contributor of VOCs (25,153 tons)
- 3rd largest NOx source (19,860 tons)
- Meteorological analysis supports frequent contribution
- Currently part of KC Maintenance Area
- KDHE will recommend nonattainment designation

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Next Steps

- Draft Technical Document posted to web site in approximately one week
 - <http://www.kdheks.gov/bar/air-monitor/ozone.html>
- Comments to KDHE will be received on draft through Dec. 31
- Recommendation submitted to EPA by March 12, 2009
- EPA will review and provide comments back to states on their recommendations
- EPA will allow formal public comment period
- March 12, 2010 – Final Designations Announced

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QUESTIONS OR COMMENTS ?



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