St. Louis Area Ozone Designation Process Meeting

Jeffry Bennett, PE
Missouri Department of Natural Resources

John Rustige, PE
Missouri Department of Natural Resources

June 10, 2008
St. Louis, Missouri

MISSOURI
DEPARTMENT OF
NATURAL RESOURCES

Presentation Overview

- Current Ozone Status/Nonattainment Area
- New Ozone Standard
- Designation Process
- Local Stakeholder Involvement

1997 EPA Ozone Standard

- Primary and secondary standards both set at 80 parts per billion, (ppb)
  - Uses an 8-hour averaging time
  - Fourth highest value for each year averaged to calculate design value
  - Three years of data needed to determine status
  - In compliance up to 84 ppb
- More recent science shows 1997 standard not adequate to protect public health

St. Louis Ozone Plan History

- 1-Hour Ozone Planning Efforts (1990's), attained earlier this decade, and area was redesignated as attainment on May 12, 2003.
- 8-hour Nonattainment Area
  - Plan was submitted to EPA in June 2007
  - I/M Element was submitted to EPA in December 2007
  - Expecting EPA Approval

Rules in Place

- Open Burning Restrictions
- Control of Emission of Nitrogen Oxides
- Control of Petroleum Liquid Storage, Loading and Transfer
- Control of Emissions From Aerospace Manufacturing and Rework Facilities (5/18/2000)
- Control of Emissions from Solvent Metal Cleaning (7/11/80)
- Liquefied Cutback Asphalt Paving Restricted (7/11/80)
- Control of Emissions from Perchloroethylene Dry Cleaning Installations (4/3/81)

Rules in Place, cont'd (2)

- Control of Emissions from Industrial Surface Coating Operations (7/11/80)
- Control of Emissions from Rotogravure and Flexographic Printing Facilities (4/3/81)
- Control of Emissions from Manufacture of Synthesized Pharmaceutical Products (4/3/81)
- Control of Emissions from Polyethylene Bag Sealing Operations (10/15/84)
- Control of Emissions from the Application of Deadeners and Adhesives (3/5/90)

Rules in Place, cont'd (3)

- Control of Emissions from Manufacture of Paints, Varnishes, Lacquers, Enamels and Other Allied Surface Coating Products (4/16/85)
- Control of Emissions from the Manufacture of Polystyrene Resin (3/5/90)
- Control of Equipment Leaks from Synthetic Organic Chemical and Polymer Manufacturing Plants (4/14/88)
- Control of Emissions from Bakery Ovens (2/17/00)
- Control of Emissions From Offset Lithographic Printing Operations (2/17/00)
- Control of VOC Emissions from Traffic Coatings (2/17/00)
- Control of Emissions from Aluminum Foil Rolling (2/17/00)

Rules in Place, cont'd (4)

- Control of Emissions from Solvent Cleanup Operations (2/17/00)
- Municipal Solid Waste Landfills (4/24/98)
- Control of Emissions From Volatile Organic Liquid Storage (5/18/2000)
- Control of Volatile Organic Compound Emissions From Existing Major Sources (5/18/2000)
- Control of Volatile Organic Compound Emissions From Wood Furniture Manufacturing Operations (5/18/00)
- Control of Emissions From Batch Process Operations (5/18/00)
- Control of Volatile Organic Compound Emissions From Reactor Processes and Distillations Operations Processes in the Synthetic Organic Chemical Manufacturing Industry (5/18/00)

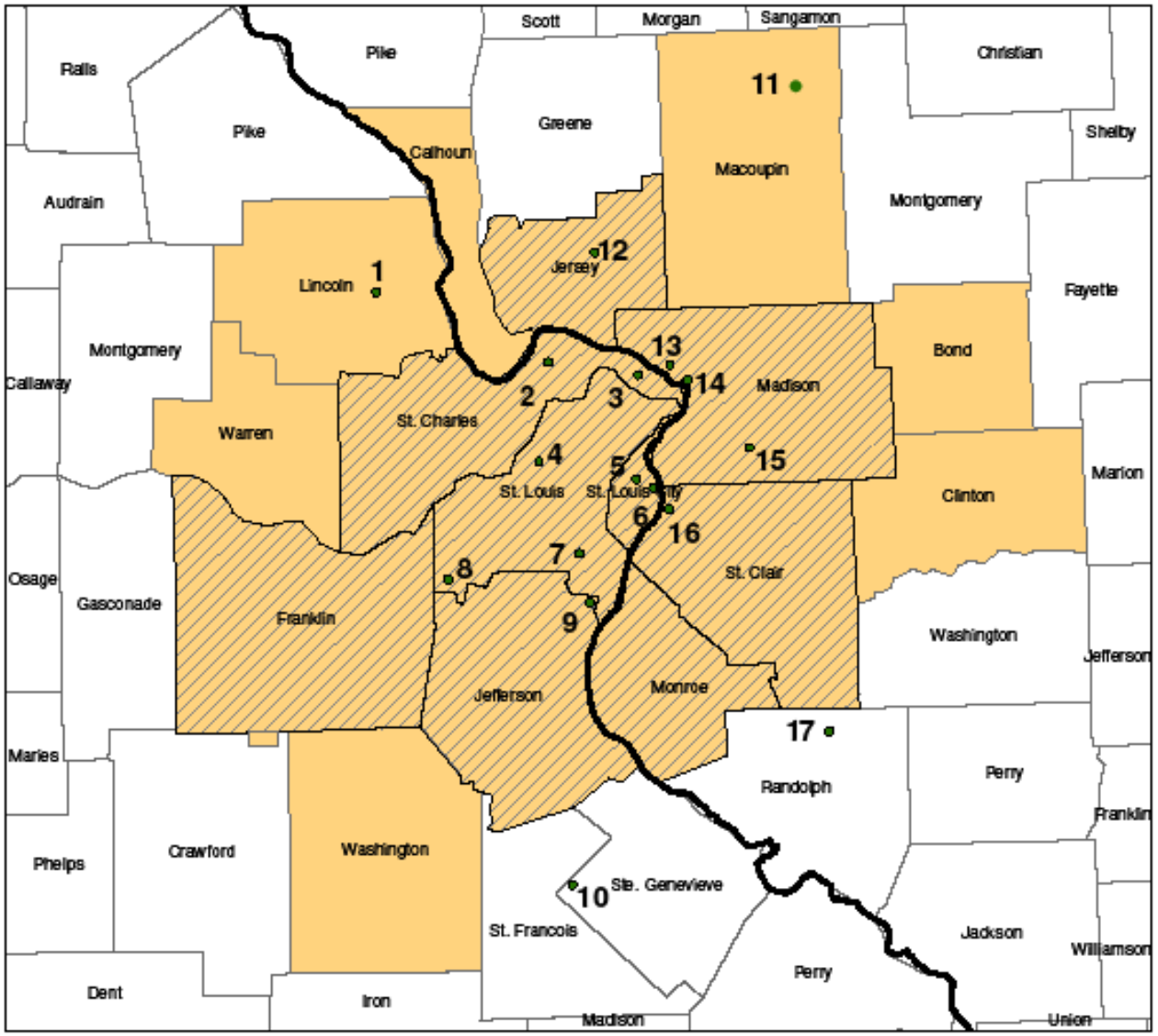
Rules in Place, Mobile Sources

- Automobile Inspection and Maintenance
- Stage II (gas station nozzle vapor recovery)
- Reformulated Gasoline

EPA's New Ozone Standard

- Primary standard – 75 ppb
- Secondary standard – 75 ppb
- Area meets the new standard if design value is less than or equal to 75 ppb

2008 St. Louis Ozone Sites and 05-07 Design Values



Department of Natural Resources
Division of Environmental Quality
Air Pollution Control Program
Prepared by Bern Johnson 3 JUN 2008

2005 – 2007 Monitor Design Values (over the 1997 standard)

St. Louis	**05-07**
West Alton, MO	**89**
Orchard Farm, MO	**89**
Maryland Heights, MO	**88**
Foley, MO	**87**
Arnold, MO	**86**
Margaretta, MO	**86**
Sunset Hills, MO	**86**

2005 – 2007 Monitor Design Values

St. Louis	05-07
Blair St., MO	84
Pacific, MO	83
Bonne Terre, MO	83
Alton, IL	81
Maryville, IL	81
Wood River, IL	81
East St. Louis, IL	78
Jerseyville, IL	77
Nilwood, IL	74
Houston, IL	71

Timeline for Implementation

Milestone	Date
EPA Administrator signed final rule	March 12, 2008
Effective Day of final rule (60 days following the publication in the Federal Register)	June 2008
State provide recommendations on designations to EPA	March 2009 (based on 2005-2007 monitoring data)
Final Designations by EPA	March 2010
Effective Date of Designations	Summer 2010
SIPs Due	Summer 2013
Attainment Dates	2013-2030 depending on severity of problem

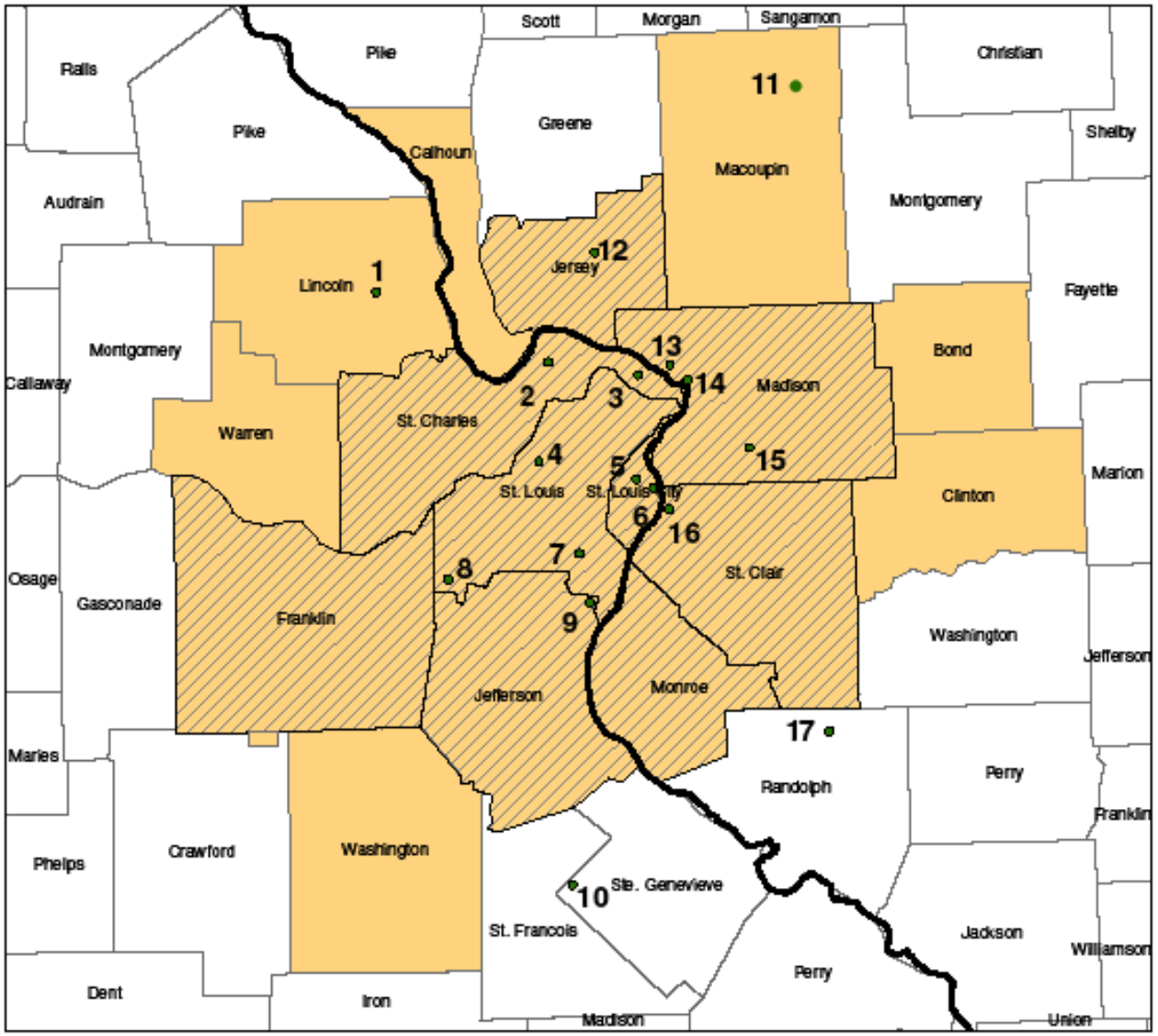
EPA's Guidance for 2008 Ozone Standard

- New EPA guidance for determining area designations expected in late 2008
  - EPA Region VII has told us that the guidance will likely be "similar" to previous guidance for 2003 designation
- EPA will release new implementation rules/requirements in next few years

EPA's Previous Guidance for Boundary Recommendation

- Test #1 – Does a monitor in the metropolitan area violate the standard?
- Test #2 – Do VOC and NOx emission sources in each county contribute to ozone concentrations over the standard?
- The designation process is not optional; if a monitor violates the standard, then that county is designated nonattainment and other surrounding counties are also considered based on contribution

2008 St. Louis Ozone Sites and 05-07 Design Values



Department of Natural Resources
Division of Environmental Quality
Air Pollution Control Program
Prepared by Bern Johnson 3 JUN 2008

EPA's Previous Guidance for Boundary Recommendation (cont'd)

- Default Area is the Metropolitan Statistical Area (MSA)
- In St. Louis, current nonattainment area smaller than MSA
- Area can include more or less counties
  - States must document decisions
  - Based on eleven (11) boundary determination criteria
- The area determination is based on EPA's decision that includes each state's recommendation and supporting documentation

Eleven Boundary Criteria

- Emissions and air quality in adjacent areas
- Population density and degree of urbanization (significant difference from surrounding area)
- Ozone monitoring data in surrounding area
- Location of emission sources
- Traffic and commuting patterns
- Expected growth (extent, pattern and rate)

Eleven Boundary Criteria (cont.)

- Meteorology (weather and transport patterns)
- Geography/topography
- Jurisdictional boundaries (counties, air districts, current nonattainment area)
- Level of control of emission sources
- Regional emission reductions

Current Ozone Nonattainment Area

- Portion of St. Louis Area that was designated nonattainment for ozone in 2003
- Has specific requirements to reduce ozone forming emissions from previous SIPs
- Jersey County, IL was the only additional county in the current 8-hour area when compared to the “old” 1-hour area

Monitored “Violation” Area

- Three different types
  - Areas adjacent to current Nonattainment Area (inside the MSA) where monitor has recorded ozone violations
  - Areas adjacent to current Nonattainment Area (outside the MSA) where monitor has recorded ozone violations
  - Areas not adjacent to current Nonattainment Area or MSA where monitor has recorded ozone violations
- Indicates areas with high levels of ozone outside of current area with emission controls

Opportunity for Input

- State Technical Staff reviews
  - Emission inventory data
  - Transportation/commuting data
- Also consider
  - Standard growth trends from state/national average
- Question that arises
  - Is there more appropriate “local” data for growth patterns in each county?

How You Can Contribute

- County/area specific
  - Population growth information
  - Economic growth information
  - Commuting patterns
- Level of connectivity with St. Louis urban core

For More Information

- Webpage for ozone designation process
  - http://www.dnr.mo.gov/env/apcp/ozone/8hourdesignationprocess.htm
  - Information on designation process
  - Eleven boundary factors
  - Copies of presentations
  - Provides opportunity for stakeholder input
  - Future meeting announcements

Next Steps in Designation Process

- Two additional stakeholder meetings
- Next meeting expected to be mid to late July
  - Provide available technical information and update on current status of boundary designation process
- Last meeting expected to be mid September
  - Provide draft designation boundaries for areas
  - Designations proposed at that time will not necessarily be final
  - Opportunity to “pre-review” technical data and logic for recommendation
- Ultimately, EPA will make final boundary decision

Missouri Timeline for Boundary Designation Submission

- Missouri will follow normal MACC adoption process
- Public comment period
  - Comment period to start in late October
- Public hearing
  - December MACC meeting
- MACC adoption of boundary recommendations
  - February MACC meeting

Questions/Comments?

Jeffry D. Bennett, PE
Air Quality Modeling Unit Chief
jeff.bennett@dnr.mo.gov
573-751-4817

John Rustige, PE
Environmental Engineer
john.rustige@dnr.mo.gov
573-751-4817