

St. Louis Area Ozone Designation Meeting

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Missouri Department of Natural Resources

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St. Louis, Missouri



MISSOURI
DEPARTMENT OF
NATURAL RESOURCES

Presentation Overview

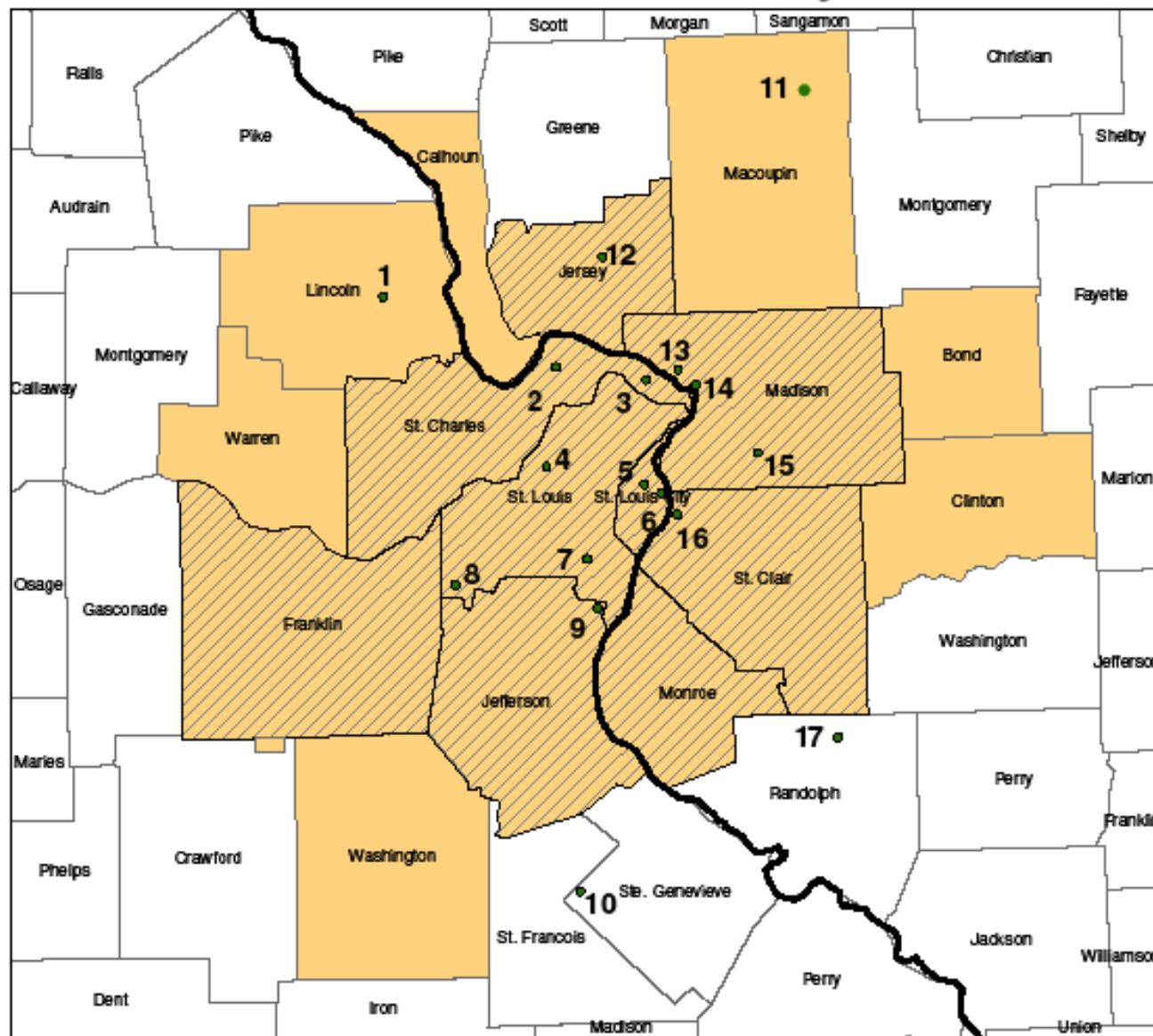
- Designation Process Review
- Draft Recommendation
- County-by-County Summary
- Next Steps/Stakeholder Involvement

EPA's 2008 8-Hour 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

- 2005-07 Design Values
 - St. Louis = 89 ppb
 - Farrar = 77 ppb
 - Memphis = 89 ppb

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



- Ozone sites
- ▨ Non-Attainment Area
- St. Louis MSA

- # - Site Name (ppb)**
- 1 - Foley (87)
 - 2 - Orchard Farm (89)
 - 3 - West Alton (89)
 - 4 - Maryland Hts (88)
 - 5 - Margaretta (86)
 - 6 - Blair Street (84)
 - 7 - Sunset Hills (86)
 - 8 - Pacific (83)
 - 9 - Arnold (86)
 - 10 - Bonne Terre (83)
 - 11 - Nilwood (74)
 - 12 - Jerseyville (77)
 - 13 - Alton (83)
 - 14 - Wood River (83)
 - 15 - Maryville (84)
 - 16 - E. St. Louis (82)
 - 17 - Houston (75)



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



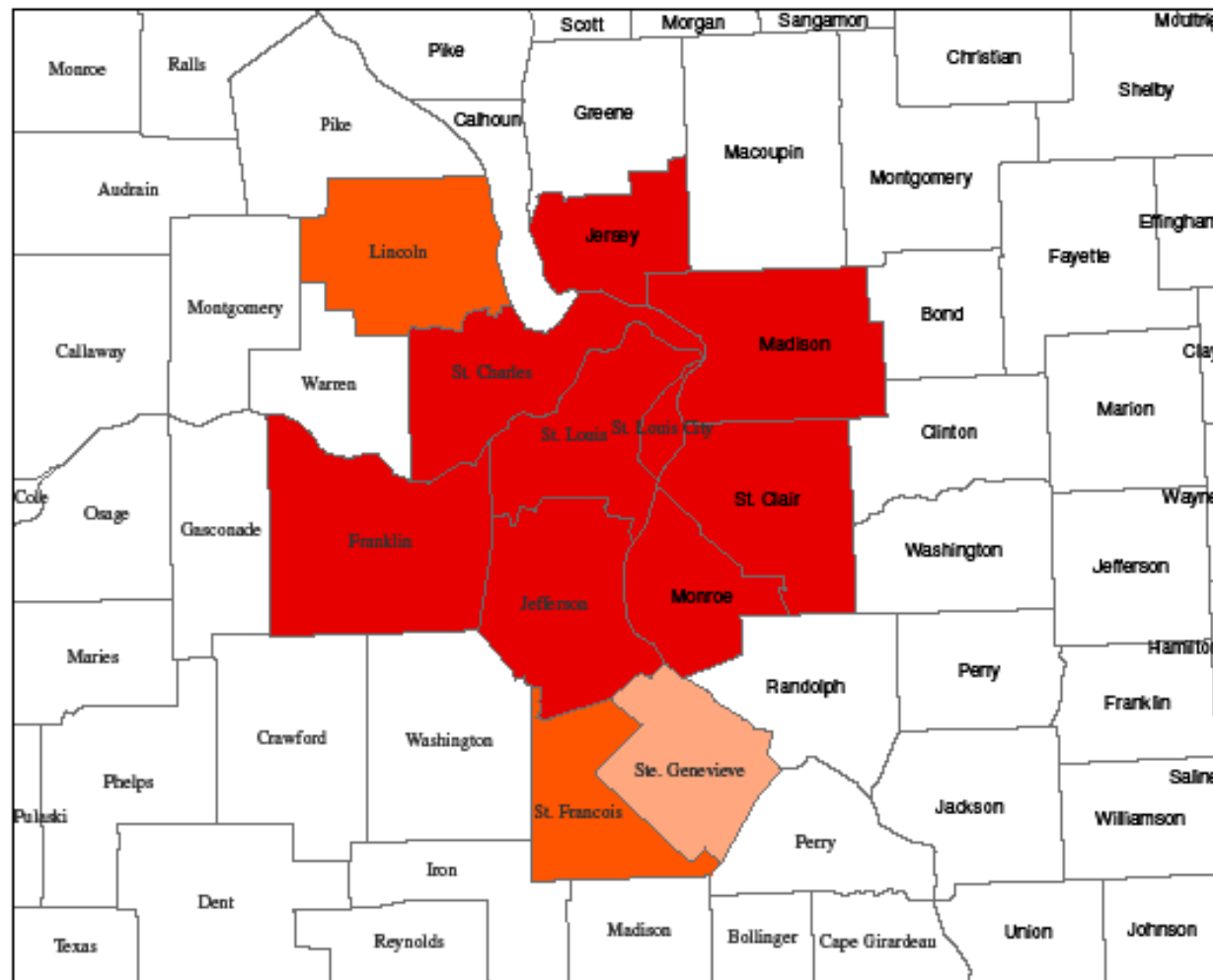
Questions to Determine Attainment Status

- Test #1 – Does a monitor in the area violate the standard?
- Test #2 – Do VOC and NO_x emission sources in each county contribute to ozone concentrations over the standard in a “nearby” area?




Draft Recommendation

- Nonattainment (Missouri)
 - St. Louis – Franklin, Jefferson, Lincoln, St. Charles, St. Francois, Ste. Genevieve, St. Louis, City of St. Louis
- All other counties in the St. Louis area attainment

Draft Recommendation for St. Louis Missouri 8-hour Ozone Nonattainment Areas based on 2005-7 Monitoring Data



0 12.5 25 50 Miles

-  St. Louis Nonattainment Area - Contribution & Violation
-  St. Louis Nonattainment Area - Violation
-  St. Louis Nonattainment Area - Current Nonattainment Area

Contribution Summary

County	NAA/ MSA	2009 VOC Total % (TPD)	2009 NOx Total % (TPD)	2007 Pop. % (1000)	Total Non-Met Summary
St. Louis	Yes/Yes	38.9 (105.2)	32.8 (135.0)	38.4 (995)	110.1
St. Louis City	Yes/Yes	14.1 (38.2)	9.6 (39.3)	13.5 (351)	37.2
Madison (IL)	Yes/Yes	11.3 (30.7)	14.4 (59.4)	10.3 (267)	36.0
St. Charles	Yes/Yes	10.5 (28.4)	12.2 (50.2)	13.3 (344)	36.0
Jefferson	Yes/Yes	8.9 (24.1)	12.2 (50.2)	8.3 (216)	29.4
St. Clair (IL)	Yes/Yes	8.7 (23.5)	6.2 (25.4)	10.1 (261)	25.0
Franklin	Yes/Yes	5.4 (14.6)	10.7 (44.0)	3.9 (100)	20.0
Pike	No/No	4.5 (12.2)	9.1 (37.6)	0.7 (18)	14.3
Ste. Genevieve	No/No	2.1 (5.8)	7.3 (30.2)	0.7 (18)	10.1
Randolph (IL)	No/No	2.1 (5.7)	5.3 (21.7)	1.3 (33)	8.7
Montgomery (IL)	No/No	2.7 (7.4)	2.9 (11.7)	1.2 (30)	6.8
Washington (IL)	No/No	2.0 (5.5)	3.9 (16.2)	0.6 (15)	6.5
Lincoln	No/Yes	2.3 (6.1)	1.7 (7.2)	2.0 (52)	6.0
St. Francois	No/No	2.0 (5.5)	1.2 (5.1)	2.4 (63)	5.6

Contribution Summary (cont'd)

County	NAA/ MSA	2009 VOC Total % (TPD)	2009 NOx Total % (TPD)	2007 Pop. % (1000)	Total Non- Met Summary
Macoupin (IL)	No/Yes	2.3 (6.3)	1.2 (4.8)	1.9 (48)	5.4
Clinton (IL)	No/Yes	2.0 (5.4)	1.1 (4.7)	1.4 (36)	4.5
Crawford*	No/No	2.1 (5.7)	1.1 (4.4)	0.9 (24)	4.1
Warren	No/Yes	1.7 (4.7)	1.2 (5.1)	1.2 (30)	4.1
Perry	No/No	1.7 (4.6)	1.6 (6.4)	0.7 (18)	4.0
Monroe (IL)	Yes/Yes	1.1 (3.0)	1.1 (4.6)	1.3 (32)	3.5
Jersey (IL)	Yes/Yes	1.2 (3.2)	0.8 (3.3)	0.9 (22)	2.9
Greene (IL)	No/No	1.4 (3.9)	0.9 (3.8)	0.5 (14)	2.8
Montgomery	No/No	1.1 (2.9)	1.1 (4.6)	0.5 (12)	2.7
Bond (IL)	No/Yes	1.2 (3.4)	0.7 (3.1)	0.7 (18)	2.6
Washington	No/Yes	1.0 (2.6)	0.4 (1.7)	0.9 (24)	2.3
Gasconade	No/No	1.1 (2.9)	0.6 (2.5)	0.6 (15)	2.3
Calhoun (IL)	No/Yes	0.5 (1.4)	0.5 (2.2)	0.2 (5)	1.2

County-by-County Summary

- **St. Louis County (Nonattainment)**
 - Largest emissions for both VOC (105.2 TPD) and NO_x (135.0 TPD) in the St. Louis area
 - All monitors within the county monitor a violation of the standard (highest design value – Maryland Heights 88 ppb) for 2005-07
 - Largest population in the area (995,118)
 - Largest annual VMT in the area (11.8 billion VMT/year)
 - Meteorological analysis is supportive of frequent contribution
 - Population reduction predicted between 2000 and 2020 (-4%)
 - Located in the current 8-hour ozone nonattainment area
 - Emission reductions have been realized from previous VOC/NO_x control requirements

County-by-County Summary

- **St. Louis City (Nonattainment)**
 - Second largest emission in St. Louis for VOC (38.2 TPD) and fifth largest for NO_x (39.3 TPD)
 - Both monitors within the city monitor a violation of the standard (highest design value – Margareta 86 ppb) for 2005-07
 - Second largest population in the area (350,759)
 - Second largest VMT in the area (3.4 billion VMT/year)
 - Meteorological analysis is supportive of frequent contribution
 - Flat population projection between 2000 and 2020
 - Located in the current St. Louis ozone nonattainment area
 - Emission reductions have been realized from previous VOC/NO_x control requirements

County-by-County Summary

- **St. Charles County (Nonattainment)**
 - Third (tied) largest emission in St. Louis for NO_x (50.2 TPD) and fourth largest for VOC (28.4 TPD)
 - Both monitors within the county monitor a violation of the standard (highest design value – West Alton and Orchard Farm 89 ppb) for 2005-07
 - Third largest population (343,952)
 - Fifth largest VMT in the area (2.8 billion/year)
 - Meteorological analysis is supportive of frequent contribution
 - 55% population growth between 2000 and 2020 (over 400,000 in 2020)
 - Located in the current St. Louis ozone nonattainment area
 - Emission reductions have been realized from previous VOC/NO_x control requirements

County-by-County Summary

- **Jefferson County (Nonattainment)**
 - Third (tied) largest emission in St. Louis for NO_x (50.2 TPD) and fifth largest for VOC (24.1 TPD)
 - Monitor within the county monitors a violation of the standard (Arnold design value 86 ppb) for 2005-07
 - Population over 200,000 (216,076)
 - Sixth largest VMT in the area (2.0 billion/year)
 - Meteorological analysis is supportive of frequent contribution
 - 23% population growth between 2000 and 2020 (nearly 250,000 in 2020)
 - Located in the current St. Louis ozone nonattainment area
 - Emission reductions have been realized from previous VOC/NO_x control requirements

County-by-County Summary

■ Franklin County (Nonattainment)

- Combined emissions over 50 TPD (VOC – 14.6 TPD and NO_x - 44.0 TPD)
- No current monitoring in county – closest monitor (Pacific in western St. Louis County has a design value of 83 ppb) for 2005-07
- Population over 100,000 people (100,045)
- High VMT in the area (1.6 billion VMT/year)
- Meteorological analysis is supportive of frequent contribution
- 18% population growth between 2000 and 2020
- Located in the current St. Louis ozone nonattainment area
- Emission reductions have been realized from previous VOC/NO_x control requirements

County-by-County Summary

■ **Pike County (Attainment)**

- Combined emissions of nearly 50 TPD (VOC - 12.2 TPD and NOx - 37.6 TPD)
- No ozone monitoring in county
- Population of less than 20,000 (18,471)
- Limited connection to the St. Louis metropolitan area
- Low VMT (315 million VMT/year)
- Meteorological analysis shows limited contribution to all St. Louis monitors
- Flat population projection between 2000 and 2020
- Located adjacent to the St. Louis MSA, not adjacent to current nonattainment area

County-by-County Summary

- **Ste. Genevieve County (Nonattainment)**
 - Combined emissions over 30 TPD (VOC - 5.8 TPD and NOx – 30.2 TPD)
 - Bonne Terre monitor in violation of the standard (design value – 83 ppb)
 - Population of less than 20,000 (17,841)
 - Limited connection to St. Louis metropolitan area (along I-55)
 - Low VMT (412 million VMT/year)
 - Meteorological analysis is supportive of frequent contribution
 - Flat population projection between 2000 and 2020
 - Located adjacent to the current St. Louis nonattainment area, but not in MSA

County-by-County Summary

■ **Lincoln County (Nonattainment)**

- Combined emissions under 15 TPD (VOC - 6.1 TPD and NOx – 7.2 TPD)
- Farrar monitor in violation of 1997 standard (2005-07 design value – 87 ppb)
- Population of more than 50,000 (51,528)
- 9,467 residents work in current St. Louis nonattainment area
- Medium VMT (530 million VMT/year)
- Meteorological analysis is not supportive of frequent contribution
- 2nd highest population growth rate in Missouri between 2000 and 2020 (91%)
- Located adjacent to the current St. Louis nonattainment area and in the St. Louis MSA

County-by-County Summary

- **St. Francois County (Nonattainment)**
 - Combined emissions under 15 TPD (VOC - 5.5 TPD and NO_x – 5.1 TPD)
 - Representative Bonne Terre monitor in violation of the standard (2005-07 design value – 83 ppb)
 - Population of more than 50,000 (62,810)
 - Largest amount of working residents outside the St. Louis MSA work in the current St. Louis nonattainment area (6,144)
 - Medium VMT (587 million VMT/year) – no Interstate through traffic
 - Meteorological analysis is supportive of frequent contribution
 - 25% population growth between 2000 and 2020 (nearly 70,000 in 2020)
 - Located adjacent to the current St. Louis nonattainment area and the St. Louis MSA

County-by-County Summary

■ Crawford County (Attainment)

- Combined emissions nearly 10 TPD (VOC – 5.7 TPD and NOx – 4.4 TPD)
- No ozone monitoring in county
- Population of less than 30,000 (24,076)
- Limited connection to the St. Louis metropolitan area
- Medium VMT (608 million VMT/year); located on I-44
- Meteorological analysis is somewhat supportive of frequent contribution
- 16% population growth between 2000 and 2020
- A small portion of the county is included in the St. Louis MSA, adjacent to the current St. Louis nonattainment area

County-by-County Summary

■ **Warren County (Attainment)**

- Combined emissions under 10 TPD (VOC - 4.7 TPD and NOx – 5.1 TPD)
- No ozone monitoring in county
- Population of less than 50,000 (30,467)
- 9,467 residents work in current St. Louis nonattainment area
- Medium VMT (528 million VMT/year)
- Meteorological analysis is somewhat supportive of contribution to Foley monitor
- 64% population growth between 2000 and 2020
- Located adjacent to the current St. Louis nonattainment area and in the St. Louis MSA

County-by-County Summary

- **Montgomery, Washington, and Gasconade Counties (Attainment)**
 - Combined emissions less than 10 TPD (all VOC less than 4 TPD and all NOx less than 5 TPD)
 - No ozone monitoring in counties
 - Populations of less than 30,000
 - Limited connection to the St. Louis metropolitan area
 - Medium/Low VMT (Montgomery – 504 million VMT/year [I-70]; others less than 250 million VMT/year)
 - Meteorological analysis suggest Washington County would have frequent contribution; downwind of the St. Louis area under predominant winds for Montgomery and Gasconade
 - All counties are projected to grow less than 15% between 2000 and 2020 (2020 population of less than 30,000 for all)
 - Washington is located in the St. Louis MSA, the others are not

County-by-County Summary

- **Perry County (Nonattainment - Separate)**
 - Combined emissions under 15 TPD (VOC - 4.6 TPD and NOx – 6.4 TPD)
 - Farrar monitor in violation of the standard (2005-07 design value – 80 ppb)
 - Population of less than 20,000 (18,794)
 - Very limited connection to the current St. Louis nonattainment area
 - Low VMT (366 million VMT/year)
 - Meteorological analysis is somewhat supportive of frequent contribution (county is two counties from the St. Louis area)
 - 25% population growth between 2000 and 2020 (nearly 70,000 in 2020)
 - Not located adjacent to the current St. Louis nonattainment area or the St. Louis MSA

Timeline for Implementation

<u>Milestone</u>	<u>Date</u>
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

Opportunity for Input

- Review technical support document and proposed recommendation posted on the webpage for ozone designation process
 - <http://www.dnr.mo.gov/env/apcp/ozone/8hourdesignationprocess.htm>
- Provide comments on the recommendation or any data, if necessary

Next Steps in Designation Process

- Today's meeting is the last meeting for this process
 - Designations proposed at this time are not necessarily final
 - Still have an opportunity to review technical data and rationale for recommendation and provide comments
- The overall draft recommendation will be made available for the entire state of Missouri by November 4th
 - 30 days prior to the public hearing before the Missouri Air Conservation Commission on December 4, 2008

Missouri Timeline for Boundary Designation Submission

- Public comment period
 - Comment period to start in early November
- Public hearing
 - December 4th MACC meeting
- MACC adoption of boundary recommendations
 - February MACC meeting

Questions/Comments?

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