Public Information and Consultation Meeting

BOUNDARY DESIGNATION

Eight-hour Ozone Standard

Refaat Mefrakis, P.E.

EPA's Request

- Requested designation recommendations and documentation from each State Governor be submitted to the Regional Administrator by April 15, 2003.

Consent Decree

- Set April 15, 2004, as the date that area designations for the 8-hour ozone standard will be finalized by EPA.

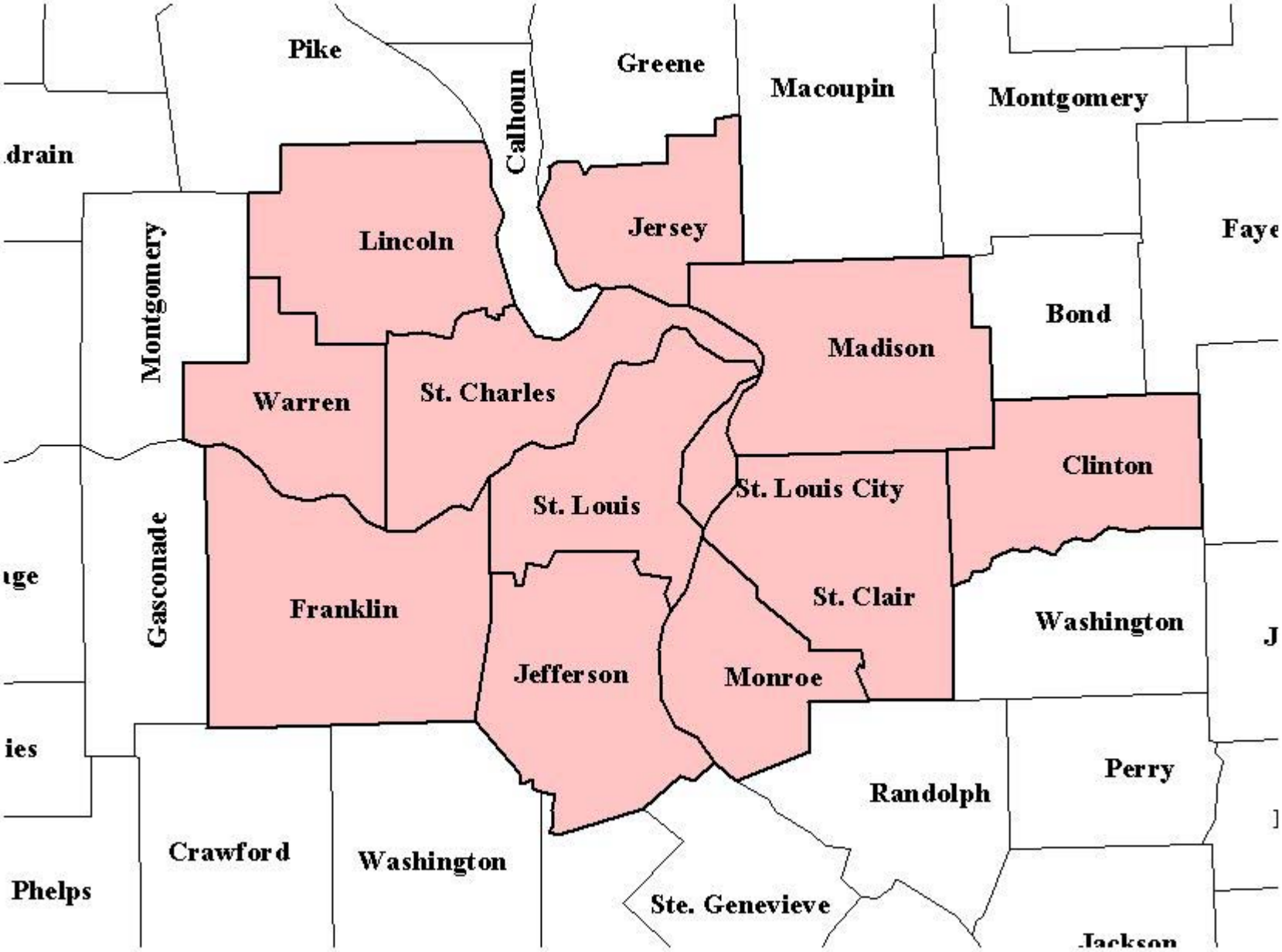
Missouri Submittal in 2000

- **Recommendation and technical support document in July 2000**
  - http://www.dnr.state.mo.us/alpd/apcp/homeapcp.htm

Criteria for Establishing Boundaries

- Area designations are based on air quality data.
- Any area that does not meet or that contributes to nearby areas not meeting the ambient air quality standard.
- EPA recommends that C/MSA serve as the presumptive boundary for 8-hour ozone nonattainment areas.

ST. LOUIS MSA


Pike
Calhoun
Greene
Macoupin
Montgomery
drain
Lincoln
Jersey
Faye
Montgomery
Bond
Madison
Warren
St. Charles
Clinton
St. Louis City
St. Louis
Gasconade
ıge
Franklin
St. Clair
Washington
Jefferson
Monroe
ies
Perry
Randolph
Crawford
Washington
Phelps
Ste. Genevieve

EPA Guidance for Establishing Boundaries

- EPA asks states wishing to propose boundaries different than the C/MSA to address 11 different factors.

Factors to Consider

- Emission and Air Quality
- Population Density and Degree of Urbanization
- Monitoring Data
- Location of Emissions Sources
- Traffic and Commuting Pattern
- Expected Growth

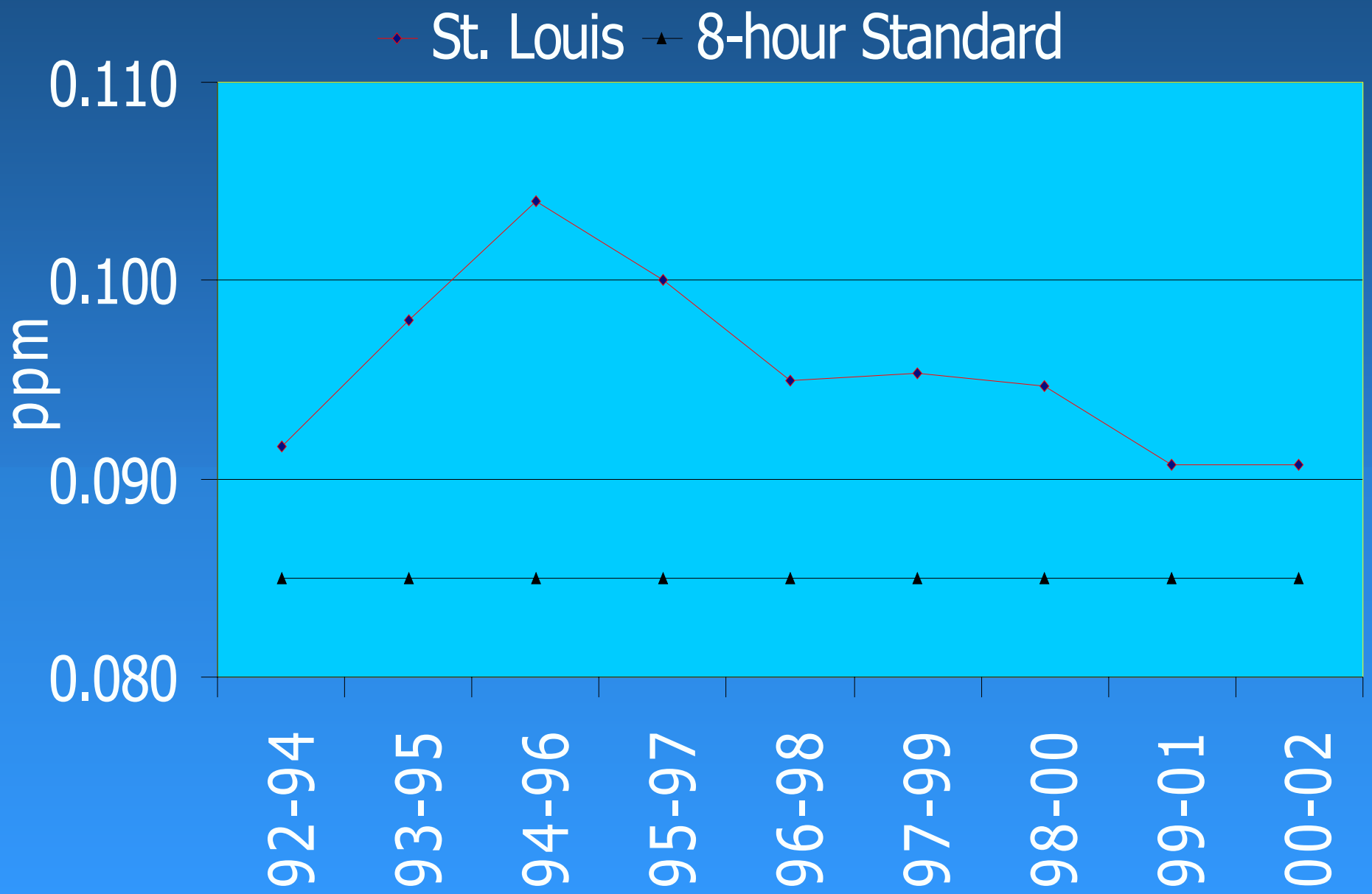
Factor to Consider Cont'd

- Meteorology
- Geography/ Topography
- Jurisdictional Boundaries
- Level of Control of Emission Sources
- Regional Emissions Reductions

What's a Nonattainment Area?

- Any area that does not meet (or that contributes to ambient air quality in a nearby area that does not meet) the national primary or secondary ambient air quality standard for the pollutant.

8-hour Design Values



Summary of Timeline

- States are to update recommended designation during 2003.
- Promulgate air quality designation in April of 2004.
- State Implementation Plans are due by 2007.

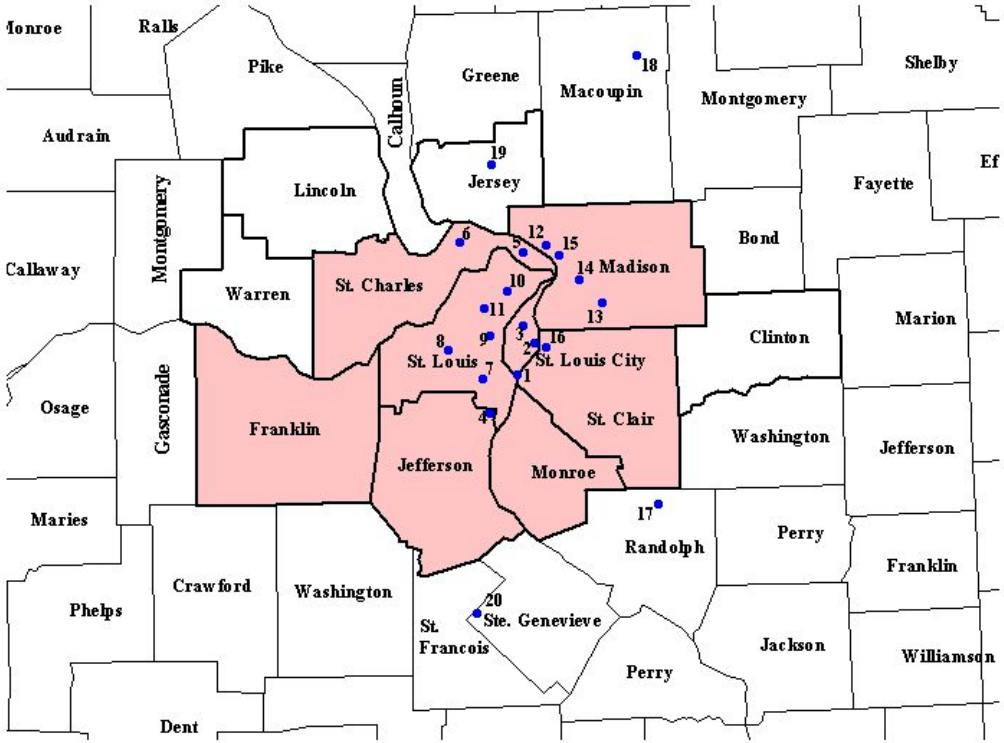
Technical Support Document

Jeffry D. Bennett, P. E.

Progress to Date

- Review of July 2000 recommendation and technical support document
- Collection of "new" information (air quality monitoring data, emissions, traffic count/VMT, population)

CURRENT MONITORING LOCATIONS IN THE ST. LOUIS AREA



● Current Monitors

1 South Broadway
2 Clark
3 Margaretta
4 Arnold
5 West Alton
6 Orchard Farm
7 Sunset Hills
8 Queeny Park
9 Ladue
10 Ferguson
11 Breckenridge Hills
12 Alton (IL)
13 Maryville (IL)
14 Edwardsville (IL)
15 Wood River (IL)
16 E. St. Louis (IL)
17 Houston (IL)
18 Nilwood (IL)
19 Jerseyville (IL)
20 Bonne Terre

MSA

STL Non-Attainment Area

Missouri Department of Natural Resources
Air and Land Protection Division
Air Pollution Control Program
Cartography by Donald Cripe, January 2003

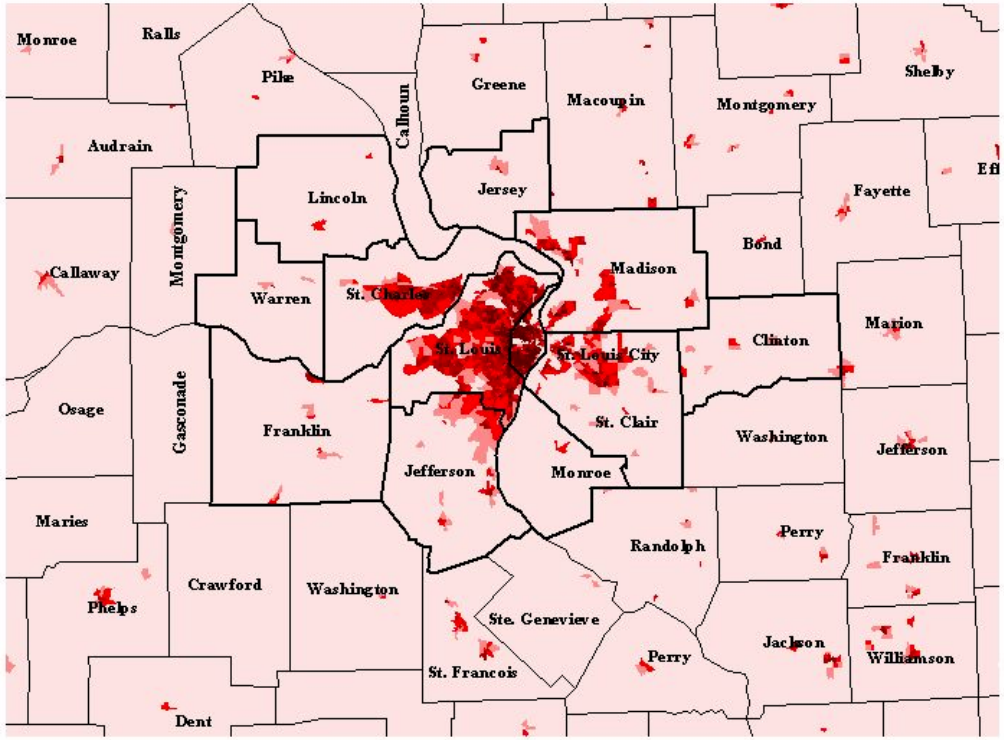
8-hour Ozone Design Values

Monitor	95-97	96-98	97-99	98-00	99-01	00-02
	Average	Average	Average	Average	Average	Average
West Alton	**100**	**95**	**95**	**94**	**90**	**90**
Orchard Farm	**93**	**90**	**91**	**92**	**90**	**90**
Jerseyville (IL)	84	**85**	**91**	**91**	**89**	**89**
S. Lindbergh	83	84	**89**	**89**	**88**	**89**
Queeny Park	81	82	**85**	**90**	**88**	**88**
Newstead	83	81	83	-	-	-
Margaretta						**88**
Arnold	**90**	**87**	**92**	**91**	**89**	**86**
Ferguson	**88**	**87**	**89**	**88**	**85**	**86**
St. Ann	**85**	84	**87**	**87**	-	-
Breckenridge						**86***
E. St. Louis (IL)	78	76	80	82	82	**85**
Bonne Terre		**88**	**88**	**90**	**85**	84
Alton (IL)	**93**	**86**	**86**	81	82	84
Clayton – Hunter	83	81	82	83	81	84
S. Broadway	82	79	79	81	81	82
Edwardsville (IL)	**88**	**86**	**87**	**86**	81	81
Wood River (IL)	**89**	**87**	**85**	82	80	80
Nilwood (IL)	83	81	80	82	80	80
Maryville (IL)	**88**	**87**	**85**	82	78	80
Houston (IL)	78	78	78	80	78	79
Clark & Tucker	72	75	78	74	73	73

BOLD denotes monitors that exceed the 85 ppb cutoff

*2001 and 2002 data only

2000 POPULATION DENSITY FOR COUNTIES IN THE ST. LOUIS AREA



Population Density

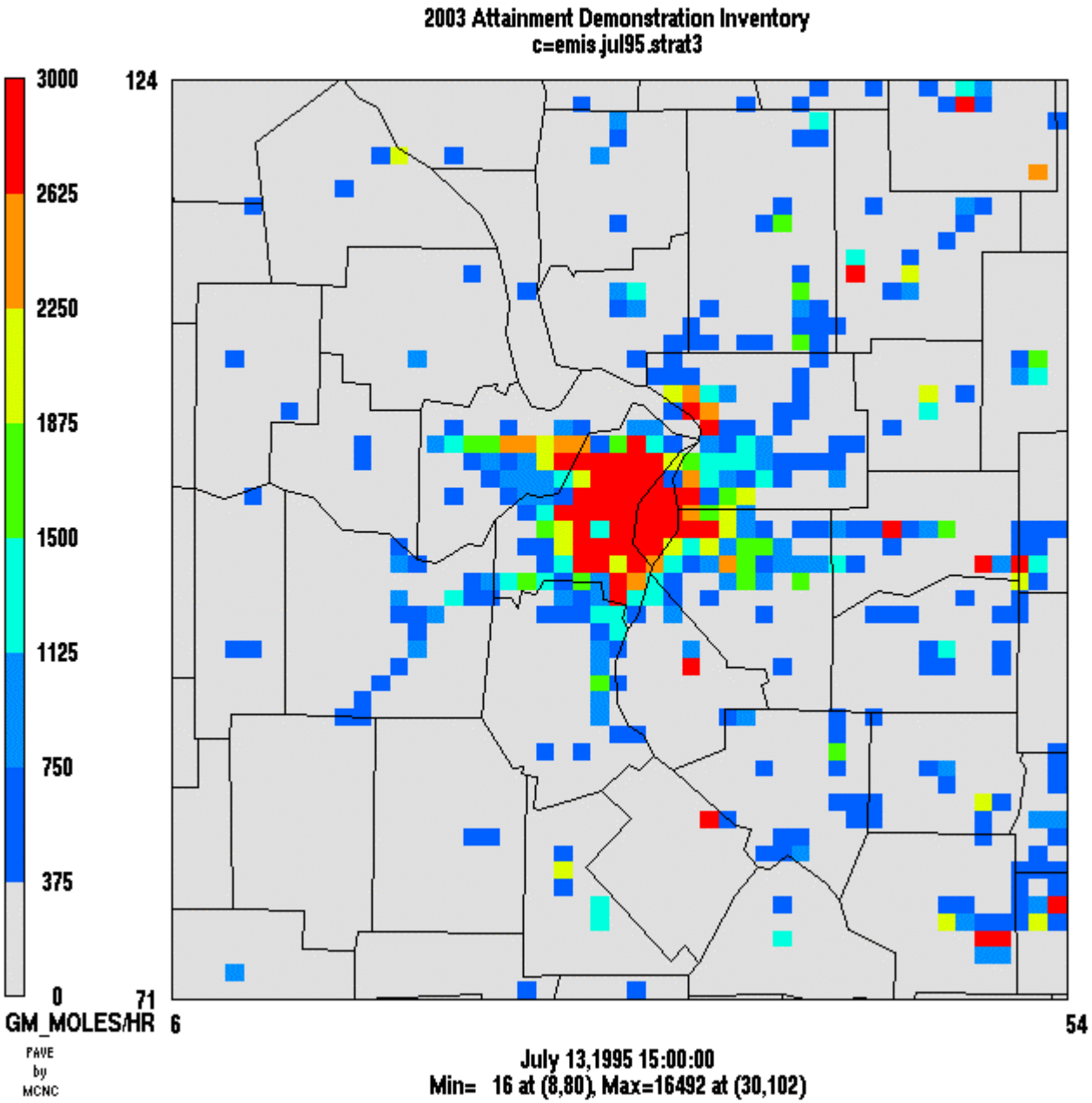
- 0 - 500
- 500.01 - 1000
- 1000.01 - 2500
- 2500.01 - 5000
- +5000.01

Missouri Department of Natural Resources
Air and Land Protection Division
Air Pollution Control Program
Cartography by Donald Cripe, January 2003

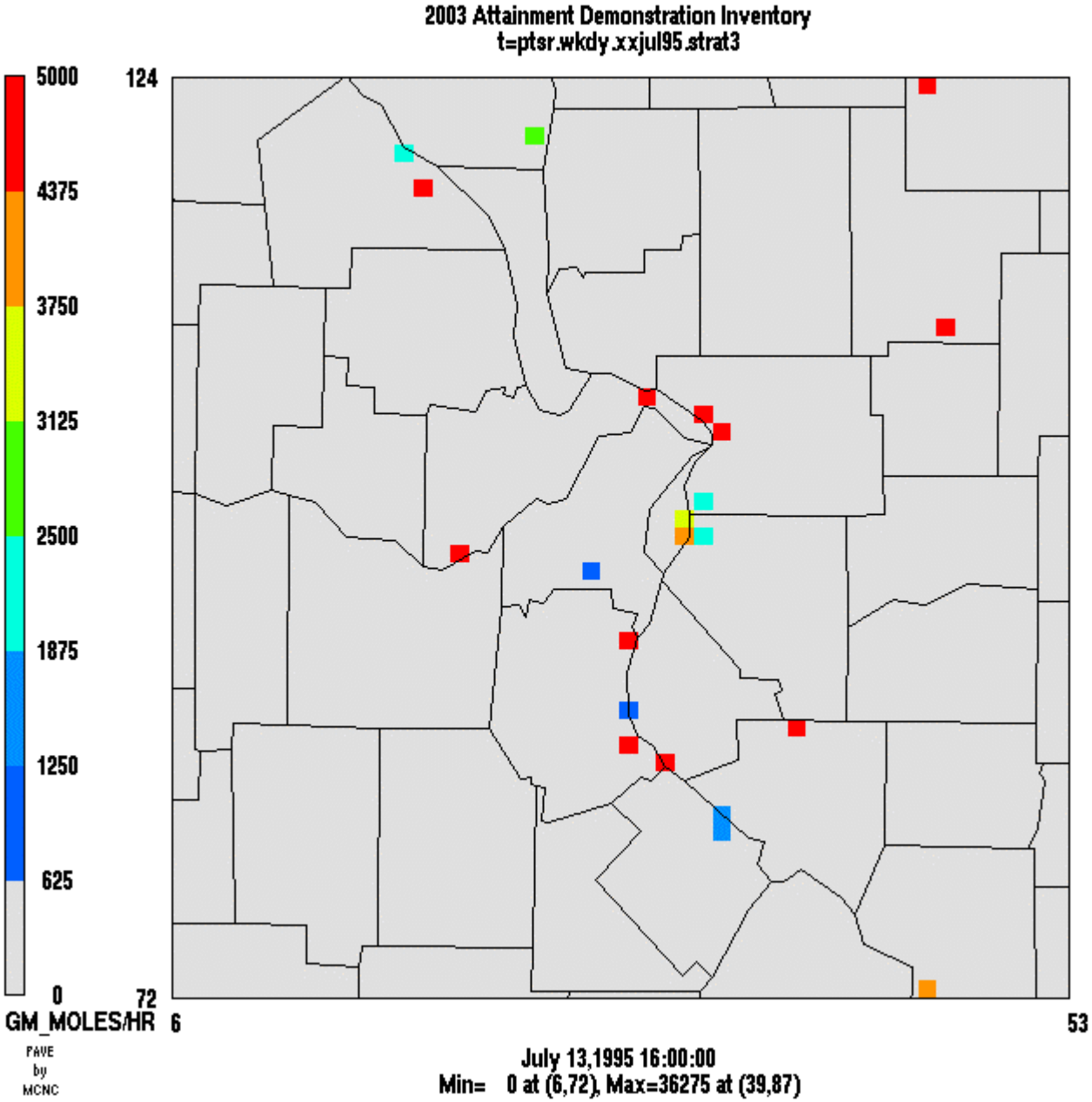
Population and Emissions Summary

	1990 population	2000 population	1999 NOx (TPD) Point	Area	Mobile	Total	1999 VOC (TPD) Point	Area	Mobile	Total
MISSOURI										
ST. LOUIS	993,529	1,016,315	24.0	51.7	108.8	184.5	18.0	55.8	65.1	138.9
ST. LOUIS CITY	396,685	348,189	7.6	21.8	28.5	57.9	12.6	16.0	17.0	45.6
ST. CHARLES	212,907	283,883	63.0	16.2	24.5	103.7	6.6	13.0	14.7	34.3
JEFFERSON	171,380	198,099	35.1	6.7	17.7	59.5	3.2	7.3	10.6	21.1
FRANKLIN	80,603	93,807	33.6	9.4	12.4	55.4	3.6	5.4	8.3	17.3
Lincoln	28,892	38,944	0.4	1.4	4.0	5.8	0.4	4.2	2.5	7.0
Warren	19,534	24,525	0.4	1.1	4.4	5.9	0.5	4.0	2.8	7.2
Missouri MSA	**1,903,530**	**2,003,762**	**164.1**	**108.4**	**200.3**	**472.8**	**44.8**	**105.8**	**121.0**	**271.6**
St. Francois	48,904	55,641	1.3	1.5	5.2	8.0	0.3	5.5	3.2	9.0
Washington	20,380	23,344	0.1	0.4	2.2	2.7	0.2	2.4	2.2	4.7
Crawford	19,173	22,804	0.1	0.8	4.4	5.3	0.7	3.6	2.8	7.1
Pike	15,969	18,351	29.7	1.6	2.5	33.8	8.3	2.7	1.6	12.6
Ste. Genevieve	16,037	17,842	11.5	0.8	3.4	15.7	0.5	1.9	2.1	4.5
Gasconade	14,006	15,342	0.2	0.8	1.8	2.8	0.4	2.4	1.1	3.9
Montgomery	11,355	12,136	0.3	1.1	4.0	5.4	0.0	1.9	2.5	4.4
ILLINOIS										
MADISON	249,238	258,941	57.3	11.8	27.5	96.6	12.9	24.2	13.7	50.9
ST. CLAIR	262,852	256,082	4.7	10.4	26.0	41.0	4.4	21.2	13.0	38.6
MONROE	22,422	27,619	0.7	3.2	3.3	7.1	0.2	4.9	1.8	6.8
Clinton	33,944	35,535	8.4	4.6	3.8	16.7	0.4	7.6	3.0	11.0
Jersey	20,539	21,668	0.0	2.8	2.2	5.0	0.4	2.7	3.0	6.0
Illinois MSA	**588,995**	**599,845**	**71.0**	**32.8**	**62.8**	**166.5**	**18.3**	**60.7**	**34.3**	**113.2**

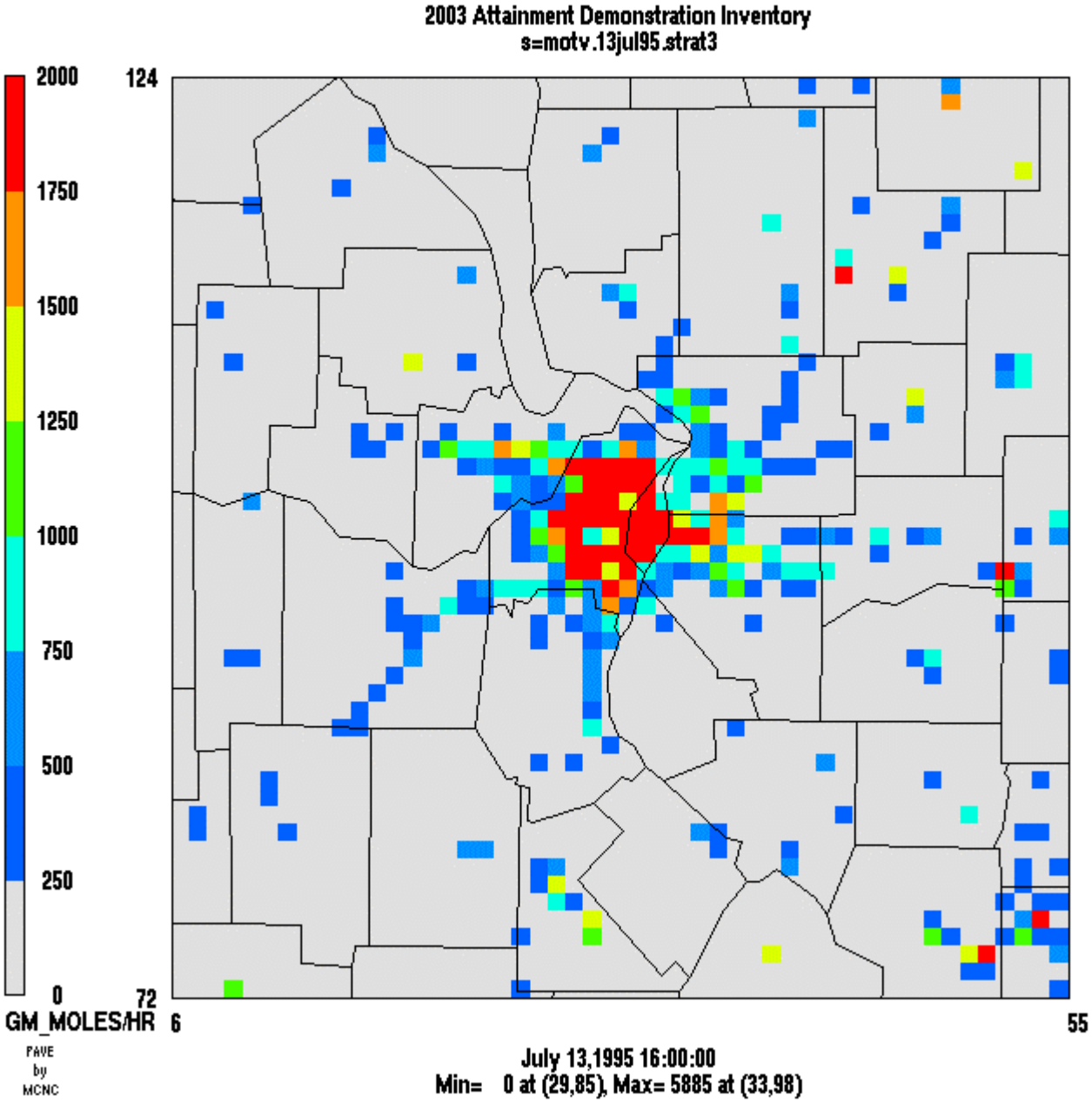
Total Low–level NOx Emissions



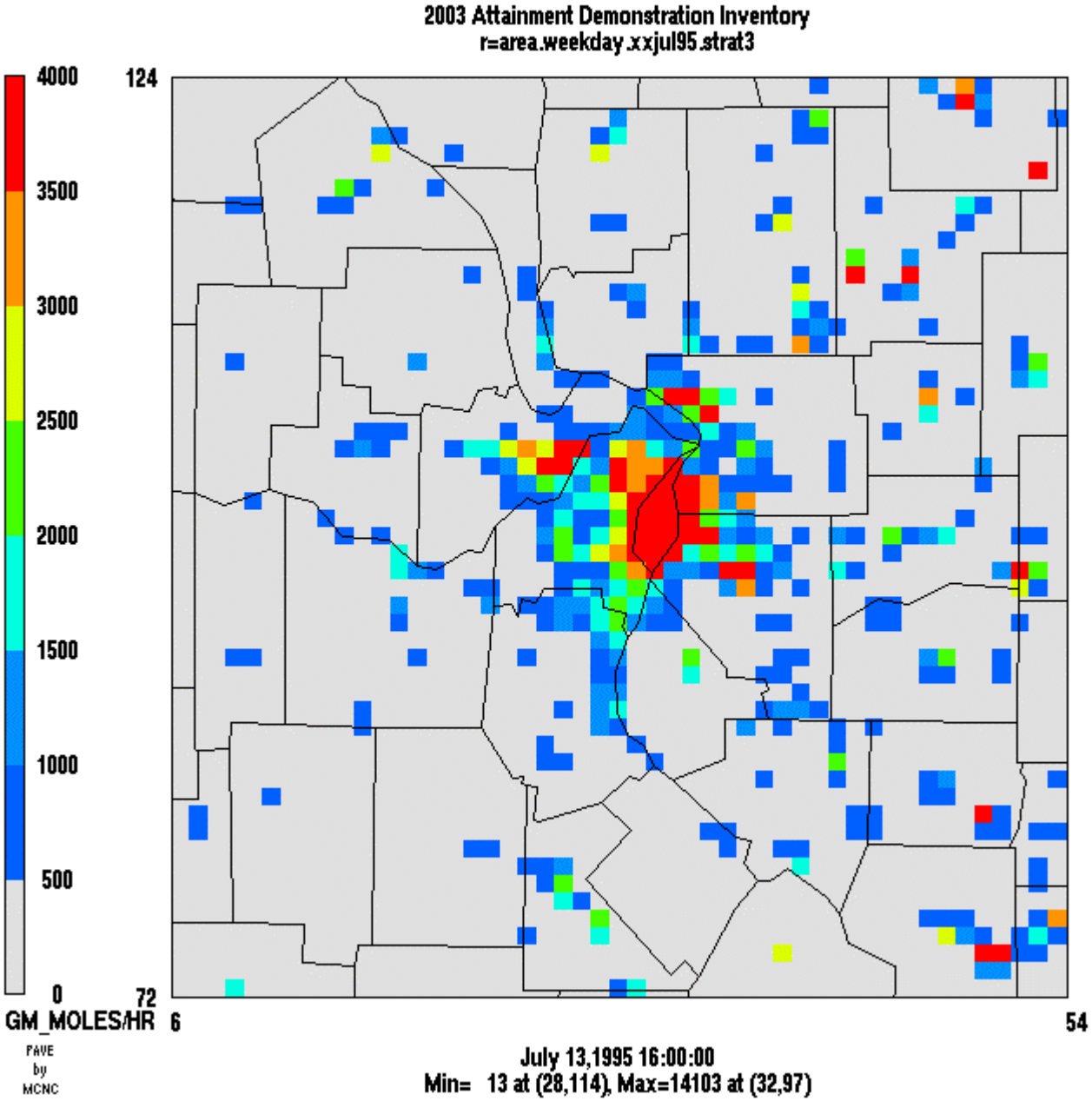
Elevated Point Source NOx Emissions



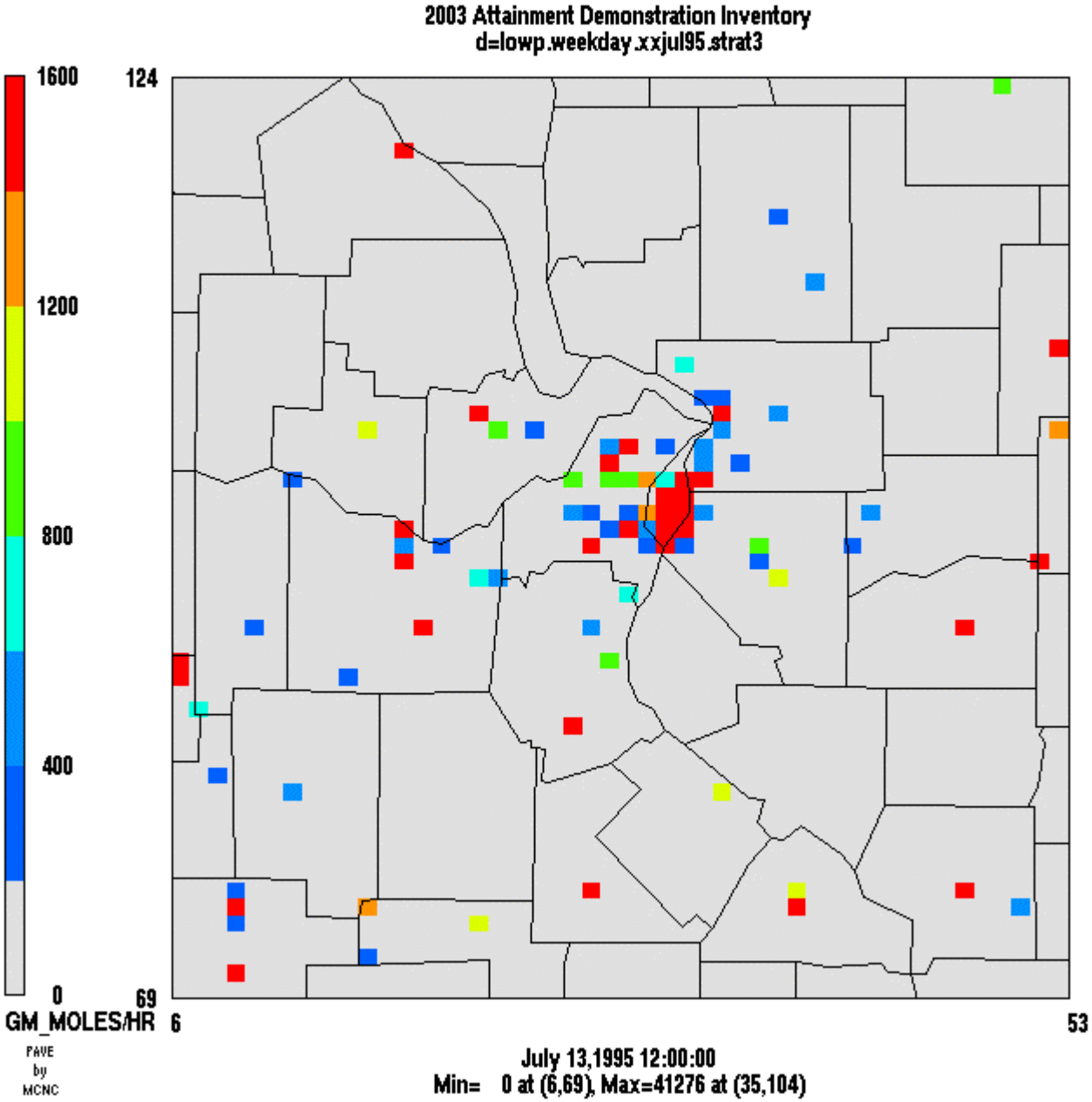
Mobile Source VOC Emissions



Area Source VOC Emissions



Low–level Point Source VOC Emissions



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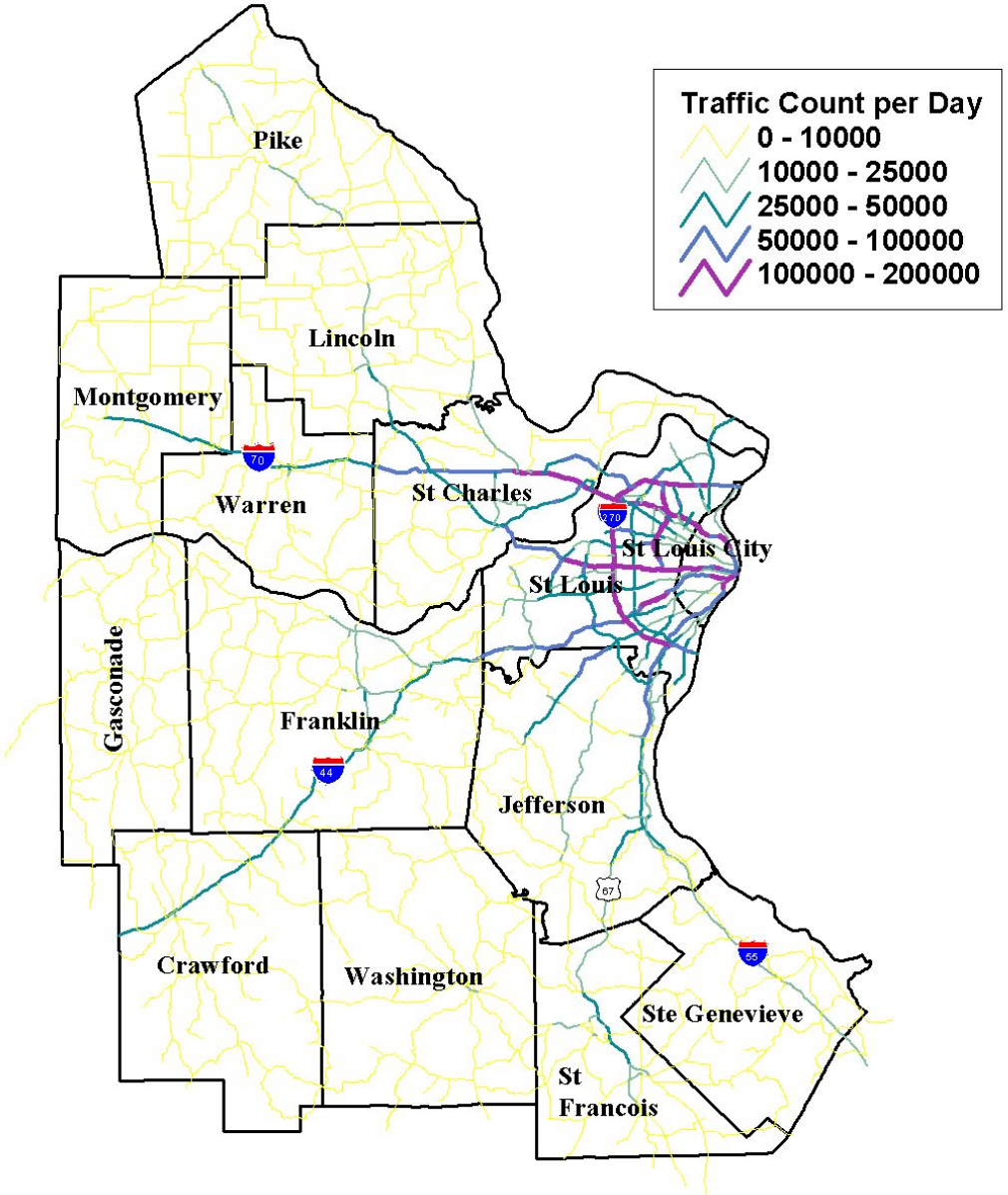

Regional NOx Controls

- 10 CSR 10-6.350 -- Missouri Statewide NOx Trading Rule
- Control of emissions from electric generating units in eastern 1/3 of Missouri to 0.25 lb NOx/MMBTU and 0.35 lb NOx/MMBTU in western 2/3 of Missouri

Summary

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- Upon completion of that effort (including input from the affected communities), MDNR will propose boundary designations for areas in Missouri

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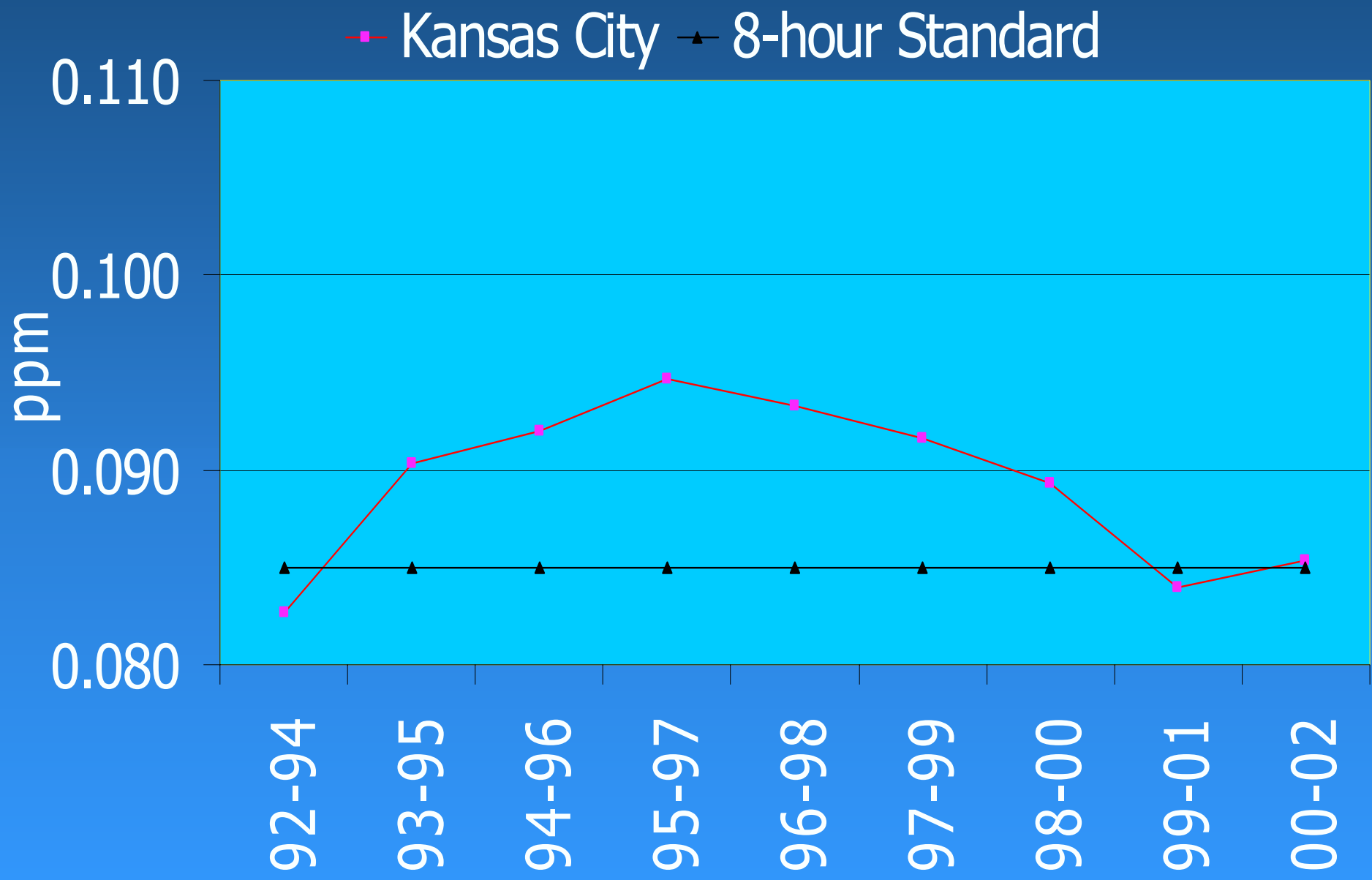

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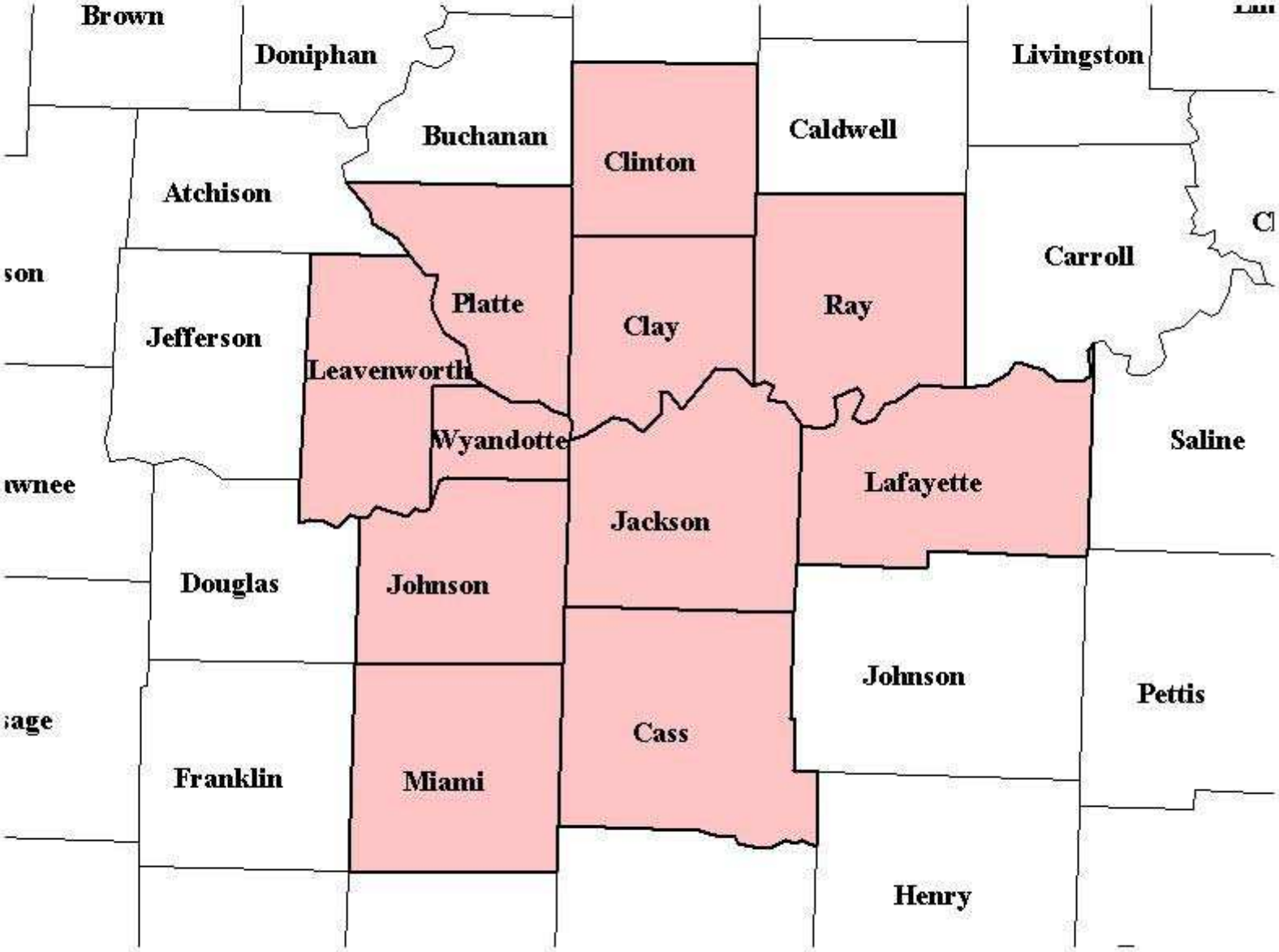
KANSAS CITY MSA



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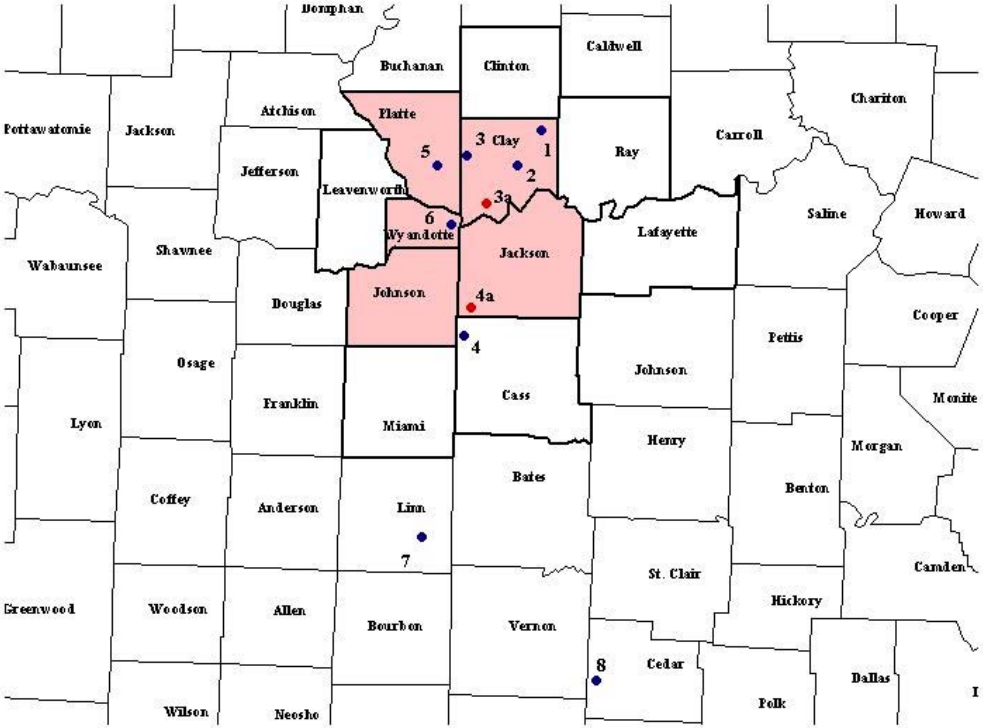

Current Monitors

1 Watkins Mill State Park
2 Liberty
3 Rocky Creek
4 Richards Gebaur - South
5 KCI Airport
6 JFK - Wyandotte Co (KS)
7 Mine Creek (KS)
8 El Dorado Springs

Relocated Monitors

3a Worlds of Fun
4a Richards Gebaur

MSA

KC Maintenance Area

Missouri Department of Natural Resources
Air and Land Protection Division
Air Pollution Control Program
Cartography by Donald Cripe, January 2003

8-hour Ozone Design Values

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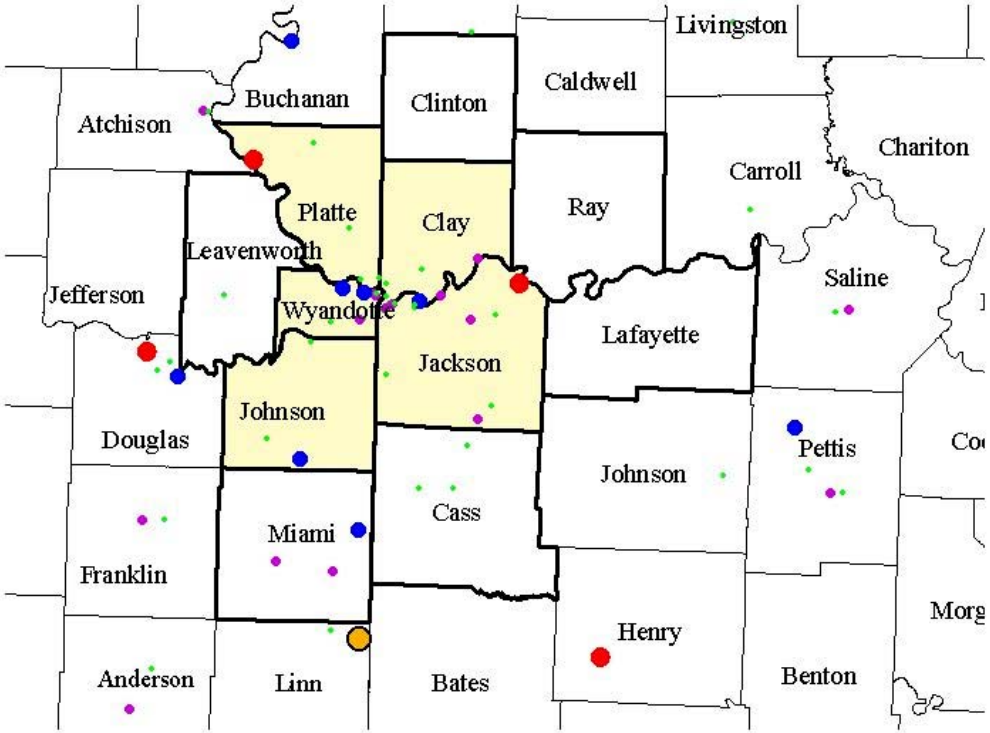
	Average	Average	Average	Average	Average	Average
Liberty	**94**	**93**	**91**	**89**	84	**85**
Watkins Mill	**91**	**89**	**90**	**86**	80	80
KCI	**86**	**86**	**85**	**85**	81	84
Worlds of Fun	80	80	83	**85**	82	-
Richards Gebaur	73	72	75			
Richards Gebaur South						79
Rocky Creek						**91****
Wyandotte Co. (KS)	**85**	84	82	84	80	81
El Dorado Springs				**88**	84	83
Mine Creek (KS)				81	79	76

BOLD denotes monitors that exceed the 85 ppb cutoff
**2002 Data Only at Rocky Creek

NOx POINT SOURCES KANSAS AND MISSOURI



MSA

KC Maintenance Area

NOx Emissions in TPY

- 25-100
- 100-1,000
- 1,000-5,000
- 5,000-25,000
- 25,000+

Missouri Department of Natural Resources
Air and Land Protection Division
Air Pollution Control Program
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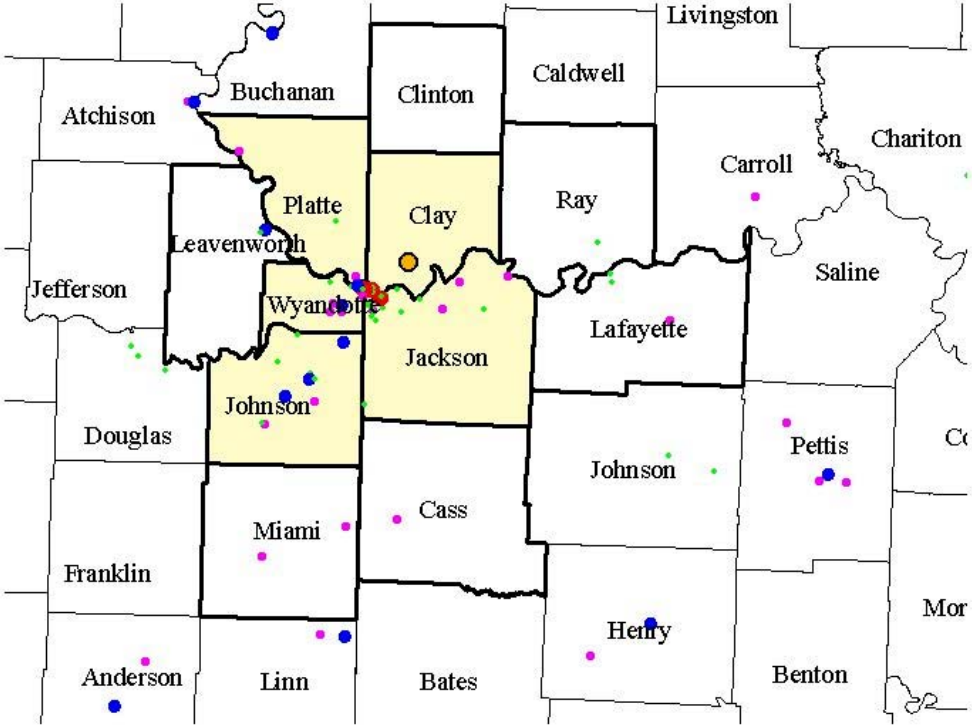
VOC POINT SOURCES
KANSAS AND MISSOURI



MSA

KC Maintenance Area

VOC Emissions in TPY

- 25 - 50
- 50.01-100
- 100.01-300
- 300.01-1,000
- 1,000+

Missouri Department of Natural Resources
Air and Land Protection Division
Air Pollution Control Program
Cartography by Donald Cripe, January 2003

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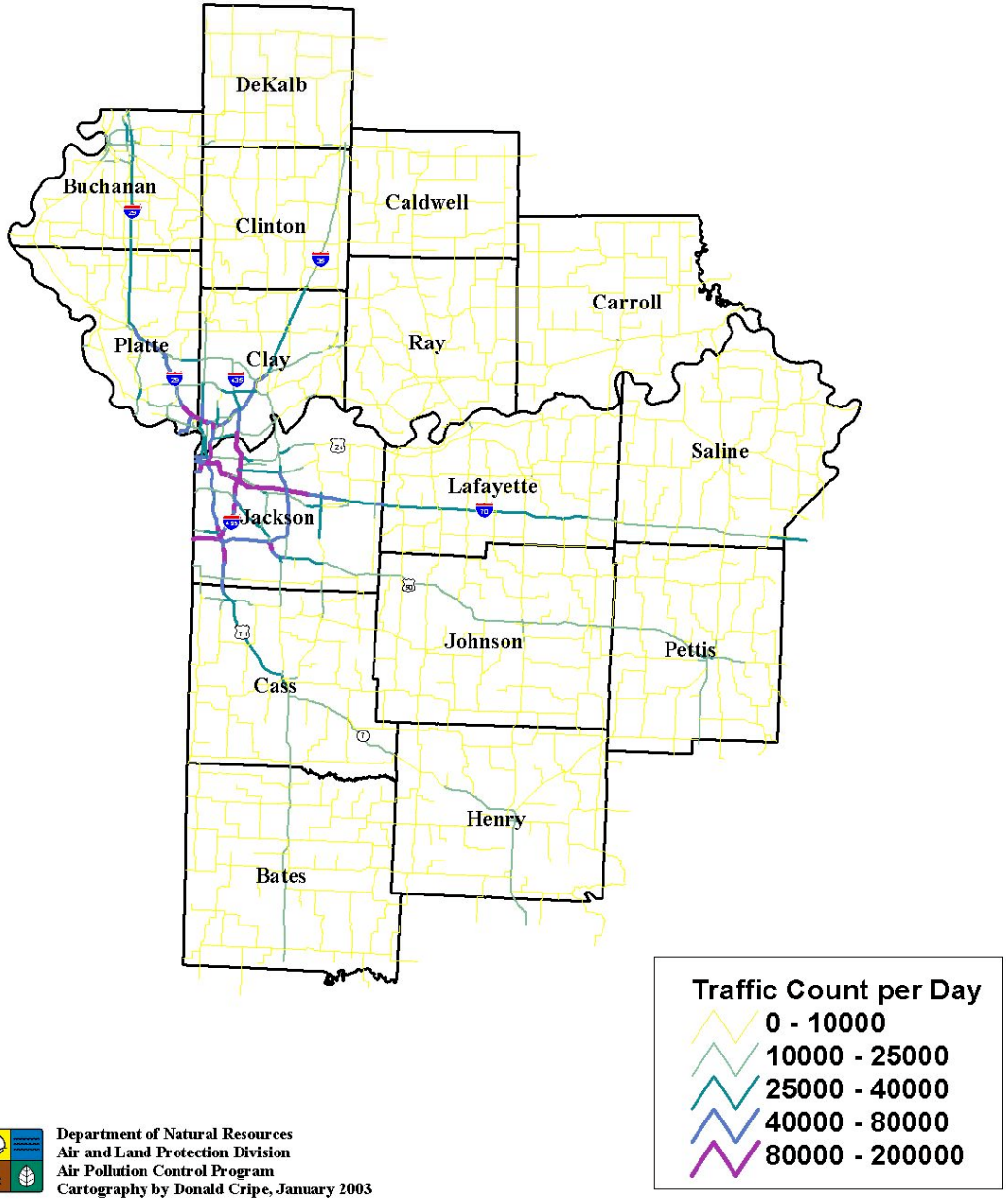

Department of Natural Resources
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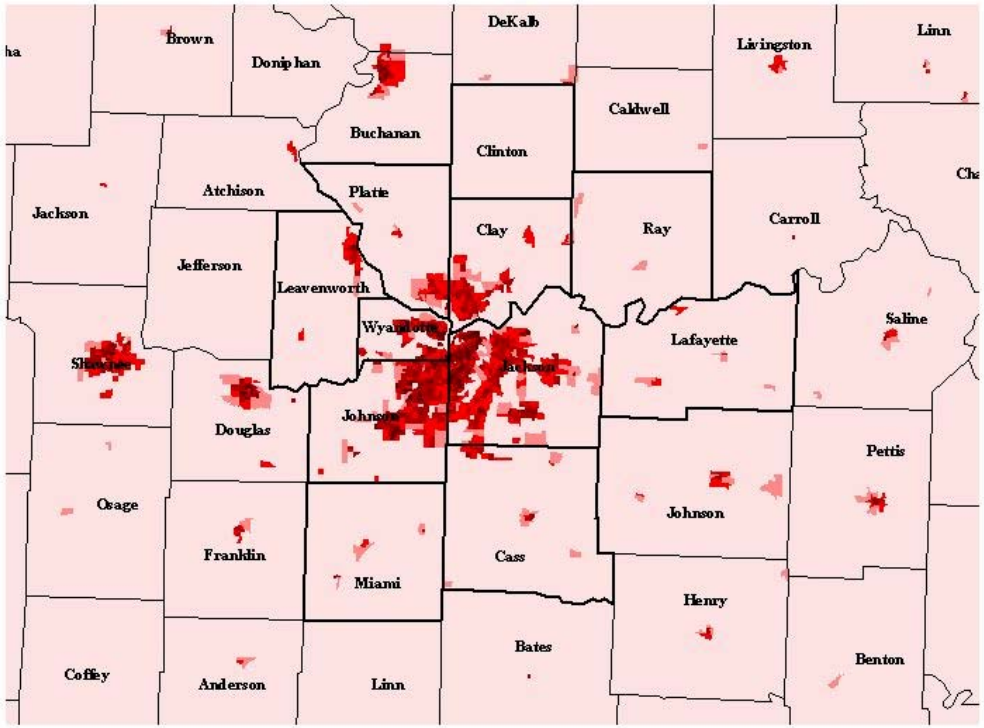

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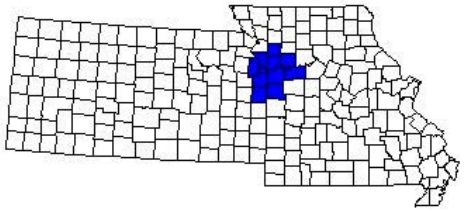
- 2500 - 5000
- 5000+



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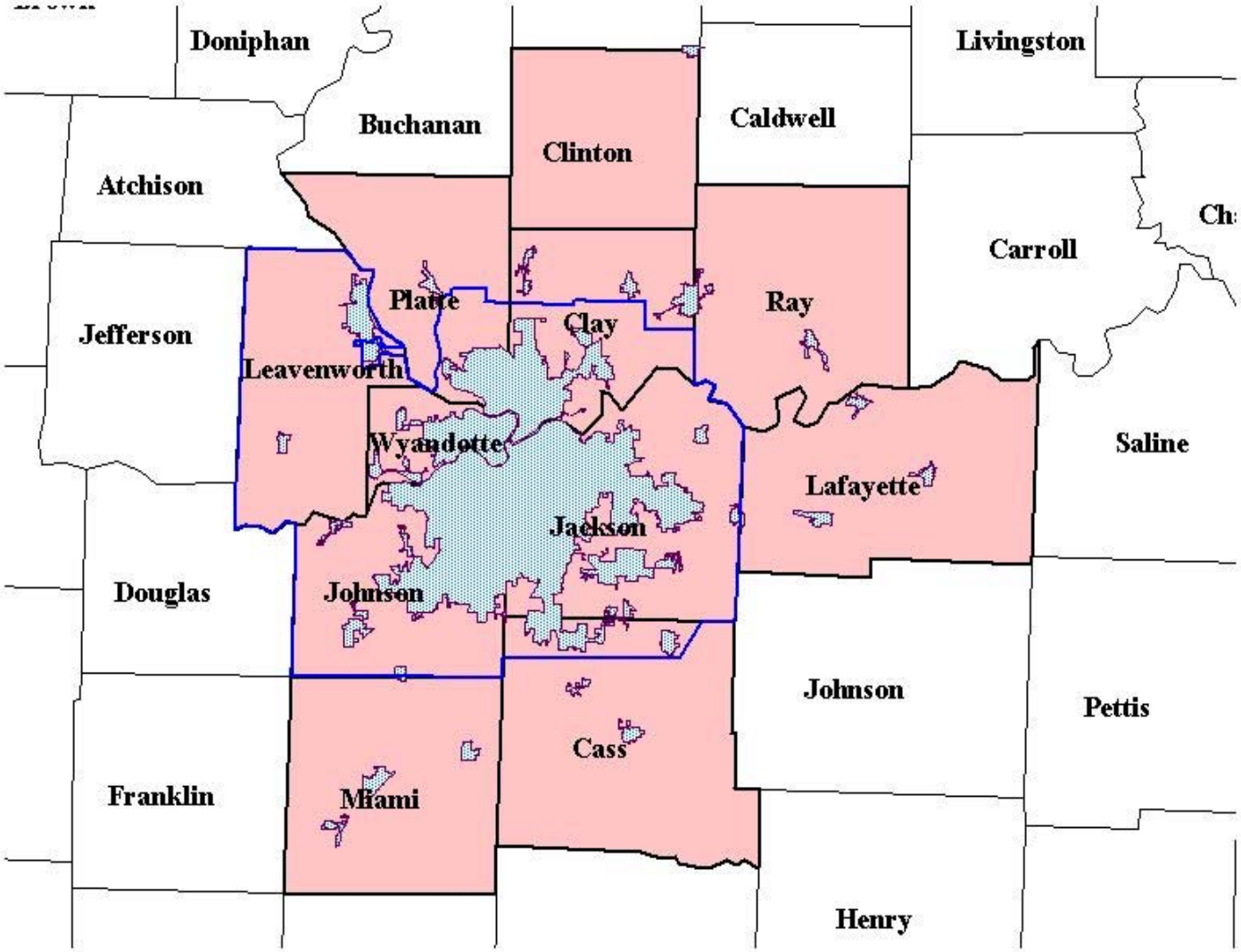
KANSAS CITY AREA BOUNDARIES



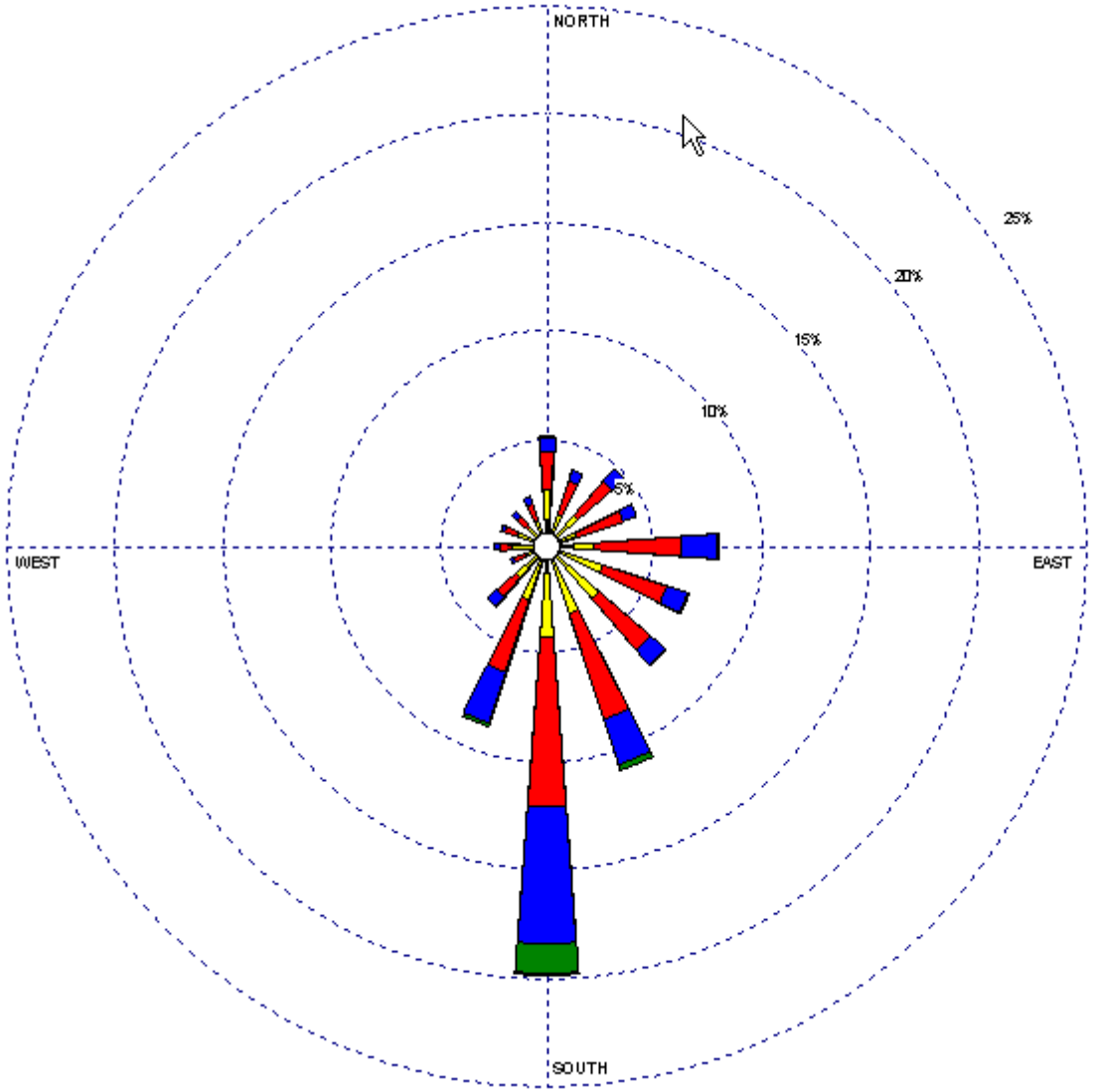
MPO BOUNDARY

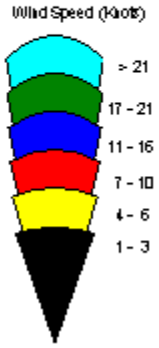
URBAN AREAS

MSA

Department of Natural Resources
Air and Land Protection Division
Air Pollution Control Program
Cartography by Donald Cripe, January 2003

KC Windrose
(June - August)





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