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March 9, 2009

Mr. Bharat Mathur, Acting Regional Administrator
Office of the Regional Administrator
USEPA Region 5, R19J
77 West Jackson Boulevard
Chicago, Illinois 60604-3507

Dear Mr. Mathur:

On behalf of Governor Quinn, and pursuant to the U.S. Environmental Protection Agency's revision to the National Ambient Air Quality Standards (NAAQS) for ozone dated March 12, 2008, I am submitting our recommendations for attainment and nonattainment designations for the State of Illinois. Included with Illinois' recommendations is a supporting document prepared by the Illinois Environmental Protection Agency (Illinois EPA). The Illinois EPA will also provide this document to your staff in electronic format to facilitate your timely review.

Specifically, the following designations are recommended for Illinois:

Cook	Nonattainment	Chicago
DuPage	Nonattainment	Chicago
Kane	Nonattainment	Chicago
Lake	Nonattainment	Chicago
Will	Nonattainment	Chicago
McHenry	Nonattainment	Chicago
Kendall: Oswego Township All Other Townships	 Nonattainment Attainment	Chicago
Grundy: Aux Sable Township Goose Lake Township All Other Townships	 Nonattainment Nonattainment Attainment	 Chicago Chicago
Madison	Nonattainment	Metro-East
Monroe	Nonattainment	Metro-East
St. Clair	Nonattainment	Metro-East
All Other Counties	Attainment	

We are recommending that portions of the Chicago and Metro-East metropolitan areas be designated as nonattainment for the revised 8-hour ozone NAAQS. As violations of the revised ozone standard have been measured in these areas during 2006-2008, designating them as nonattainment is appropriate. The remainder of Illinois is attaining the revised ozone standard and should, therefore, be designated as attainment.

The recommended nonattainment boundaries are the same as the boundaries established pursuant to the 1997 revisions of the ozone NAAQS, with the exception of Jersey County. We are recommending that Jersey County, which is located in the Metro-East area in southwestern Illinois, be designated as attainment for the revised ozone standard even though it is currently designated nonattainment for the 1997 version of the standard. Jersey County is rural, with virtually no emission sources, and does not contribute to nearby nonattainment areas. Jersey County was included in the nonattainment area established in 2004 because violations of that standard were measured in 2001-2003 at Illinois EPA's monitoring station located in Jerseyville. Based on 2006-2008 data, the monitoring station located in Jerseyville is attaining not just the level of the standard established in 1997, but it is attaining the level of the revised standard as well.

If there are any questions, please feel free to contact me or Laurel L. Kroack, Chief of the Bureau of Air at Illinois EPA.

Very truly yours,

Douglas P. Scott
Director

cc: Cheryl Newton, Acting Chief
Air and Radiation Division
U.S. Environmental Protection Agency, Region 5

Attachment

Technical Support Document
for
Recommended Nonattainment Boundaries in Illinois
for the
8-hour Ozone National Ambient Air Quality Standard

AQPSTR 09-01

March 9, 2009

Illinois Environmental Protection Agency
Division of Air Pollution Control
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P.O. Box 19276
Springfield, IL 62794-9276

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Introduction

On March 12, 2008, U.S. Environmental Protection Agency (U.S. EPA) revised the ozone National Ambient Air Quality Standard (NAAQS) in response to numerous studies which link the health effects associated with ozone exposure to increases in mortality, as well as cardiovascular and respiratory health effects. The primary ozone standard was strengthened from 0.08 parts per million (ppm), set in 1997 to a level of 0.075 ppm (73 FR16436; March 27, 2008). U.S. EPA also strengthened the secondary ozone standard to provide increased protection against adverse public welfare effects including impacts on vegetation. This standard is identical to the primary standard (0.075 ppm). Following the promulgation of a new or revised air quality standard, the Clean Air Act (CAA) requires the Governor to recommend initial designations of the attainment status for all areas of the State. Areas can be classified as ***nonattainment*** (does not meet, or contributes to a nearby area that does not meet the NAAQS), ***attainment*** (meets the NAAQS), or ***unclassifiable*** (cannot be classified based on available data). Illinois is, therefore, required to provide recommendations for attainment/nonattainment area boundaries for the new 8-hour ozone standard. The U.S. EPA will act on the State's recommendations by either affirming and promulgating the recommended designation boundaries, or by promulgating new designations.

This report provides the basis for recommendations by the Illinois Environmental Protection Agency (IEPA) for attainment/nonattainment designation boundaries for all areas in the State of Illinois for the 8-hour ozone standard**.** Based on the most recent three years of ambient monitoring data (2006-2008), only two counties in Illinois are currently violating the 8-hour ozone NAAQS, Cook and Madison counties. Based on an analysis of the factors contained in federal guidance, the IEPA is recommending that portions of the Chicago and Metro-East metropolitan areas be designated as nonattainment for the 8-hour ozone standard. The recommended boundaries also reflect U.S. EPA guidance "to show that: 1) violations are not occurring in the excluded portions of the recommended area and 2) the excluded portions do not contain emission sources that contribute to the observed violations." The remaining areas of Illinois should be classified as attainment areas for the ozone standard (Figure 1).

Federal Guidance

IEPA initially relied on guidance memorandums issued by U.S. EPA on March 28, 2000 and April 1, 2003 for developing this recommendation for establishing the geographic boundaries of nonattainment areas (NAA) for the 8-hour ozone standard. In these guidance documents, U.S. EPA recommended that areas with air quality data showing violations of the 8-hour NAAQS, and nearby areas that cause or contribute to NAAQS violations, be designated nonattainment. Due to the pervasive nature of ground level ozone, and transport of ozone and its precursors over large geographic areas, U.S. EPA also recommends that Metropolitan Statistical Areas (MSAs), as well as Core Based Statistical Areas (CBSAs) or Combined Statistical Areas (CSAs), as defined by the Office of Management and Budget (OMB), associated with the violating monitor(s) serve as the starting point or "presumptive" boundary of 8-hour ozone NAAQS. U.S. EPA published updated guidance on December 4, 2008. This guidance follows the same conceptual approach as the March 2000 and April 2003 guidance in that it recommends presumptive boundaries based on CSA and CBSA defined statistical areas.

The proposed ozone nonattainment area boundaries are shown in Figure 2 and are included within the boundaries of the Chicago-Naperville-Michigan City, IL-IN-WI Combined Statistical Area (Chicago CSA) and St. Louis MO-IL Metropolitan Statistical Area (St. Louis MSA). For the purpose of this analysis, the St. Louis MSA counties in Illinois are consistent with the CSA boundaries included in the St. Louis, St. Charles-Farmington, MO-IL CSA. A listing of the counties comprising the Chicago CSA and the St. Louis, St. Charles-Farmington, MO-IL CSA are included in Table 1. Of these statistical areas, only those counties in Illinois are represented as part of this analysis.

TABLE 1
COUNTIES INCLUDED IN THE
CHICAGO CSA AND ST. LOUIS MSA*

Chicago-Naperville-Michigan City (IL-IN-WI) Combined Statistical Area	St. Louis, St. Charles-Farmington, MO-IL CSA
Cook County, IL	**Bond County, IL**
DuPage County, IL	**Calhoun County, IL**
Lake County, IL	**Clinton County, IL**
Kane County, IL	**Jersey County, IL**
Will County, IL	**Macoupin County, IL**
DeKalb County, IL	**Madison County, IL**
McHenry County, IL	**Monroe County, IL**
Kankakee County, IL	**St. Clair County, IL**
Kendall County, IL	**Crawford County**
Grundy County, IL	**(Sullivan City), MO**
Lake County, IN	**Jefferson County, MO**
Porter County, IN	**Lincoln County, MO**
Jasper County, IN	**St. Charles County, MO**
Newton County, IN	**St. Louis County, MO**
LaPorte County, IN	**Warren County, MO**
Kenosha County, WI	**Washington County, MO**
	St. Louis City, MO
	Franklin County, MO
	St. Francois County, MO

*Bold Face County Names represent Counties in St. Louis, MO-IL MSA

Metropolitan areas defined by U.S. Office of Management and Budget, November 20, 2007
Website: **http://www.census.gov/population/www/metroareas/metrodef.html**

States may request nonattainment area boundaries that are smaller than the existing CSA or CBSA (MSA) boundaries where counties, or portions of counties are rural and do not contribute to nonattainment based on nine factors. The nine factors are listed below. States may also request nonattainment area boundaries that are larger than the current CSA/CBSA or MSA to include adjacent counties when those counties contain emission sources, population, growth, commuting patterns and other factors that may contribute to the nonattainment problem. The IEPA's analysis of each of the nine factors is provided in the following sections of this report.

Nine Factor Analysis

U.S. EPA recommends that States and Tribes consider the following nine factors in assessing whether to include an area in the designated nonattainment area boundary:

- Air quality data
- Emission data
- Population density and degree of urbanization
- Growth rates and patterns
- Traffic and commuting patterns
- Geography/topography
- Jurisdictional Boundaries
- Meteorology (weather/transport patterns)
- Level of control of emission sources

Air Quality Data

The 8-hour ozone design values (i.e., the average of the fourth highest values from each of three consecutive years of data at a given ambient monitor) derived from ozone measurements collected from IEPA's ambient air monitoring network from the most recent 3-year period of record (2006-2008) are summarized in Table 2 and Figure 2. As shown in Table 2 and Figure 2, IEPA's monitoring data indicate that violations of the 8-hour ozone standard have been measured in both the Chicago and Metro-East metropolitan areas. The rest of Illinois currently meets the 8-hour standard, although occasional exceedances have been recorded at almost all monitoring sites statewide due to the pervasiveness of ozone transport. Violations of the 8-hour standard within the Chicago and Metro-East areas have been measured at only a few locations. In the Chicago area, measured design values from the 2006-2008 period exceed the NAAQS at only one monitoring station located in Cook County. In the Metro-East area, design values exceeding the NAAQS have been measured in Madison County during this 3-year period. Ozone air quality data collected in Illinois, therefore, indicate that it is appropriate to designate at least portions of the Chicago and Metro-East metropolitan areas as nonattainment areas for the

8-hour ozone standard. The remaining portions of Illinois should be designated attainment for the 8-hour ozone standard.

Figures 3 and 4 depict ozone design values for 2006-2008 in the Lake Michigan and St. Louis areas, respectively. In both areas, ozone design values of greater magnitude and broader spatial extent occur in neighboring states than are observed in Illinois.

Table 2
2006-2008
8-Hour Ozone Design Values in Illinois (ppb)

AQCR	County	Site	Address	4th High 8-Hour Values 2006	2007	2008	2006-2008 8-hr Average
	Chicago Metropolitan Area						
67	Cook	Alsip	4500 W 123rd St	78	85	66	76
67	Cook	Chicago-ComEd	7801 Lawndale	75	80	66	73
67	Cook	Chicago-Jardine	1000 E. Ohio	65	75	63	67
67	Cook	Chicago-SWFP	3300 E. Cheltenham	75	82	67	74
67	Cook	Chicago-Taft	6545 W. Hurlburt	77	79	64	73
67	Cook	Chicago-University	5720 S. Ellis	70	79	63	70
67	Cook	Cicero	1830 S. 51st Ave	60	68	60	62
67	Cook	Des Plaines	9511 W. Harrison St.	65	78	57	66
67	Cook	Evanston	531 Lincoln	72	80	58	70
67	Cook	Lemont	729 Houston	70	85	71	75
67	Cook	Northbrook	750 Dundee Rd	68	76	65	69
67	DuPage	Lisle	Morton Arboretum	62	72	57	63
67	Kane	Elgin	665 Dundee	62	75	61	66
67	Lake	Waukegan	Golf & Jackson	71	81	63	71
67	Lake	Zion	Camp Logan	68	80	69	72
67	McHenry	Cary	1st St. & Three Oaks	57	74	65	65
67	Will	Braidwood	36400 S. Essex Rd	68	71	60	66
	Metro-East						
70	Madison	Alton	409 Main St.	79	81	68	76
70	Madison	Maryville	200 W. Division	77	87	70	78
70	Madison	Wood River	54 N. Walcott	77	86	67	76
70	Randolph	Houston	Hickory Grove & Fallview	72	79	65	72
70	St. Clair	East St. Louis	13th & Tudor	77	77	64	72
75	Jersey	Jerseyville	Liberty St.	75	75	69	73
	Rest of Illinois						
65	Peoria	Peoria	Hurlburt & Mac Arthur	67	74	60	67
65	Peoria	Peoria Hts	508 E. Glen	70	81	67	72
66	McLean	Normal	Main & Gregory	72	75	67	71
66	Champaign	Champaign	606 E. Grove	64	71	60	65
69	Rock Island	Rock Island	32 Rodman Ave.	70	71	58	66
73	Winnebago	Loves Park	1405 Maple	63	73	60	65
74	Effingham	Effingham	Route 45 South	67	78	63	69
74	Hamilton	Knight Prairie	State Route 14	66	76	66	69
75	Adams	Quincy	732 Hampshire	71	75	65	70
75	Macon	Decatur	2200 N 22nd St.	71	77	85	71
75	Macoupin	Nilwood	Heaton & DuBois	70	75	65	70
75	Sangamon	Springfield	2875 N. Dirksen	66	72	59	65

Note: The Quincy ozone monitor was moved in 2007. Data for 2006 is from the old AIRS site 170010006; data for 2007 and 2008 was collected at the new AIRS site 170010007.

Emissions Data

U.S. EPA recommends that proposed nonattainment designations for the new 8-hour NAAQS reflect not only the areas of measured violations, but also the nearby areas that contribute to measured violations. Ozone is a secondary pollutant formed by chemical reactions from emissions of oxides of nitrogen (NOx) and volatile organic compounds (VOCs) that occur in the atmosphere in the presence of sunlight. These pollutants are referred to as precursors of ozone. IEPA emissions data for NOx and VOC for 2005 are summarized in descending order by county for point, area, non-road and on-road (mobile) source categories in Figures 5 and 6.

A point source is defined as a source whose emissions are generally discharged through stacks, Area sources are defined as emissions that are spread over wide areas with no distinct discharge points (e.g. forest fires), or ones that are comprised of a large number of small point sources that are difficult to describe separately (e.g. residential fuel combustion). On-road mobile sources are classified as emissions from cars, trucks, buses, and motorcycles that are used for transportation of goods and passengers on streets and roads. Mobile non-road sources are characterized by emissions from other modes of powered transportation, such as airplanes, trains, ships, and off-highway motor vehicles.

Figures 5a and 5b, along with the accompanying tables, summarize IEPA's 2005 estimated emissions from point, area, non-road and on-road/mobile sources in the Chicago CSA for NO_x and VOCs. Figures 6a through 6b provide similar information for the St. Louis MSA, including the adjacent counties of Randolph, Montgomery, Washington. Note that the Randolph County emissions for VOC, and NO_x reflect 2005 reported emissions from the Baldwin power plant, as it is the only major contributing source in Baldwin Township of Randolph County.

For the Chicago CSA Counties (Figures 5a-5b):

- NO_x emissions are highest in Cook County with the greatest emissions from on-road sources. Cook County contributes about 47% of total NO_x emissions in the Chicago CSA counties. NO_x emissions in Will, DuPage, and Lake Counties are also relatively high.

Kendall, Grundy and DeKalb counties have relatively low emissions, which combined amount to approximately 5% of total NO_x emissions.

- VOC emissions are highest in Cook County, with the greatest emissions coming from area sources. VOC emissions from Cook County are approximately 53% of the total VOC emissions in the area. DuPage, Lake and Will counties also have relatively high VOC emissions. VOC emissions are lowest in DeKalb, Kendall and Grundy counties; these counties combined contribute approximately 5% of total VOC emissions in the area.

For the St. Louis MSA and Adjacent Counties (Figures 6a-6b):

- NO_x emissions are highest in Madison, Montgomery, St. Clair, and Randolph counties. Combined NO_x emissions from Madison, Montgomery, St. Clair and Randolph counties contribute about 77% of total NO_x emissions within the area. The greatest source contributors to the total NO_x emissions for Madison, Montgomery, and Randolph counties are point sources, whereas the greatest source contributions in St. Clair County comes from on-road sources. Washington, Bond, Jersey, and Calhoun counties have relatively low emissions; combined they contribute to nearly 10% of total NO_x emissions.
- VOC emissions are highest in Madison and St. Clair counties, and account for nearly 52% of total VOC emissions. In contrast, Clinton, Macoupin, Randolph, Montgomery, and Monroe VOC emissions contribute to 33% of total VOC emissions for the area. Area sources are the major contributor towards total VOC emissions for 2005. VOC emissions are lowest in Calhoun and Bond counties, with combined emissions contributing approximately 7% of total VOC emissions.

Figures 7a through 7b depict both the locations and emission rates of major point sources in the current Chicago CSA for NO_x and VOCs. . Emission totals are based on IEPA reported emissions for 2005. The orange solid shaded areas in the figures represent the areas being recommended as nonattainment for the new 8-hour ozone and counties bordered in blue

represent counties included in the CSA/MSA where emission sources are evaluated as contributing to nonattainment. Figures 8a and 8b provide similar information for St. Louis MSA. Additional counties adjacent to the St. Louis MSA which are included in this analysis are Montgomery, Washington, and Randolph counties.

For the Chicago CSA (Figures 7a-7b), the largest point sources for NO_x are located in Will County. Cook and Lake counties also contain major point sources contributing NO_x emissions. In comparison, Kankakee, Kendall, DeKalb, and Grundy counties have relatively few point sources emitting NO_x with contributions only representing approximately 8% of total NO_x emissions. Both the largest size and greatest number of VOC point sources occur in Cook, Will, and Grundy counties. In comparison, DeKalb, Kankakee and Kendall counties have relatively few VOC point sources.

For the St. Louis MSA (Figures 8a-8b), the largest point sources for NO_x are located in Madison, Montgomery and Randolph counties. Madison and St. Clair counties have the largest number of NO_x emitting point sources, most emitting less than 100 tons per year. Adjacent counties have relatively few point sources emitting NO_x. The largest emitting and greatest number of point sources emitting VOC's are located in Madison and St. Clair counties. Adjacent counties have relatively few point sources emitting VOC's.

Population Density and Urbanization

Table 3 lists the population of each of the counties contained in the Chicago CSA and St. Louis MSA, as well as land areas, and population densities based on U.S. Census Bureau estimates for 2007. Figures 9 and 10 graphically depict population densities in the Chicago CSA and the St. Louis MSA, respectively. For the Chicago area, Cook, DuPage, Lake, and Will counties have the highest population and high population densities, while DeKalb and Grundy County have the lowest. Madison and St. Clair counties contain the majority of the Metro-East population, while Bond, Washington and Calhoun counties are considerably less populated.

TABLE 3

POPULATION and POPULATION DENSITY ESTIMATES BY COUNTY

Chicago CSA (Illinois Counties Only)

County	Population 2007	Land Area (Square Mile)	Population Density (Persons per Sq. Mile)
Cook	5,285,107	945.68	5,589
DuPage	929,192	333.61	2,785
Lake	710,241	447.56	1,587
Kane	501,021	520.44	963
Will	673,586	836.94	805
McHenry	315,943	603.51	524
Kendall	96,818	320.58	302
Kankakee	110,705	676.75	164
DeKalb	103,729	634.16	164
Grundy	47,144	419.9	112

St. Louis MSA and Adjacent Counties (Illinois Counties Only)

County	Population 2007	Land Area (Square Mile)	Population Density (Persons per Sq. Mile)
St. Clair	261,316	663.81	394
Madison	267,347	725.02	369
Clinton	36,450	472.23	77
Monroe	32,372	388.29	83
Jersey	22,455	369.16	61
Randolph*	32,760	578.42	57
Macoupin	48,235	863.57	56
Bond	18,103	380.2	48
Montgomery*	29,810	703.8	42
Washington*	14,769	562.61	26
Calhoun	5,167	263.62	20

*Counties not included in St. Louis MO-IL MSA
Source: U.S. Census Bureau estimate as of July 1, 2007, at http://factfinder.census.gov/
Source: U.S. Census Bureau's State and County Quick Facts

Figure 11 illustrates the extent of the urbanized area within the Chicago CSA. According to the U.S. Census Bureau, MSA and CSA boundaries are dependent on a central urbanized area or contiguous area of relatively high population density. Outlying counties are included in MSAs if they exhibit strong social and economic ties to this core area, often measured by commuting and economic patterns. Therefore, it is logical to conclude that the urbanized area in Boone County is not directly influencing emissions in the Chicago CSA. A pattern of fragmented urban development and commuting is also apparent in DeKalb, Kankakee and parts of Grundy counties. County urban extents are not contiguous with the Chicago CSA.

In the St. Louis MSA and adjacent county area, urbanization is not as pronounced as seen in the Chicago CSA (See Figure 12). Madison and St. Clair counties are the most urbanized of the counties in the Metro-East portion of the St. Louis MSA. Adjacent counties such as Washington, Montgomery and Randolph are not included in the St. Louis MSA and exhibit a fragmented population with the Metro-East urban core. Based on the non-contiguous pattern of urbanization, it is logical to conclude that Washington, Montgomery, and Randolph counties are not influencing emissions related to social, economic and population growth in the Metro-East.

Figures 13 and 14 depict current land cover for both the Chicago CSA and St. Louis MSA areas based on data compiled by the Illinois Department of Agriculture. According to the "Land Cover of Illinois 1999-2000 On-Line Statistical Summary", the Chicago CSA has the most urbanized counties in the state. A high degree of urbanization is apparent in both Cook (79.9%) and DuPage (77.5%) counties. Lake County is also highly urban, with 48.3% of the county classified as urban or built-up land. In each of the Chicago area counties of Kane, Will and McHenry the land cover is dominated by agriculture ranging from 63 to 67% and the amount of urban and built-up land is less than 25% of the total land cover. The primarily rural counties of Kendall, DeKalb, Grundy and Kankakee have less than 6% urban land; however each county's land cover is greater than 80% agriculture.

Unlike the Chicago CSA, all nonattainment counties in the Metro East/St. Louis MSA area have high percentage of agriculture land (greater than 49 %). Madison and St. Clair counties have the greatest urban land cover in the Metro-East area. (See Figure 14). The counties of Calhoun, Jersey, Macoupin, Monroe, Bond and Clinton have less than 4% urban built-up land. The dominance of agricultural land use, coupled with the low population densities in these counties, confirm that they are primarily rural in nature.

Growth Rates and Patterns

Short term population growth is an important indicator of potential emission increases in an area. Figures 15 and 16 outline percent change in population between 2000 and 2007 by county for both the Chicago CSA and St. Louis MSA. This data was provided by the U.S. Census Bureau and is based on estimates dated March 22, 2007. According to the data, the Chicago CSA county of Kendall has experienced the greatest percent increase in population at 75.4%; however its total population is relatively small compared to other counties in the CSA. Cook County has experienced an estimated 2.7% decrease in population; however its total population for 2007 represents approximately 60% of the population base in the Chicago CSA area. According to the U.S Census Bureau, the Metro-East county of Monroe has experienced the greatest percent increase in population at 16.6%. Jersey County has experienced a moderate population change at 3.7%, while Randolph County experienced a loss in total population (-3.4%).

Population and economic trends are developed for long range planning activities by both State and local governmental agencies. Data compiled by the Illinois Department of Commerce and Economic Opportunity (DCEO) were referenced for this analysis and are shown in Figure 17. In the Chicago CSA, the highest total population growth between 2000 and 2030 is projected to occur in Cook and Will counties. The lowest growth in terms of net population change is projected for DeKalb, Grundy, Kendall, and Kankakee counties. In the Metro-East area, long term population growth is projected to be highest in Madison, Monroe and Macoupin counties, and lowest in Randolph, Jersey, Bond, Clinton and Calhoun counties. According to this study, St. Clair County is expected have a decrease in population in future years.

Occupational employment growth projections between 2004 and 2014 were provided by DCEO and compiled from projections developed by the Illinois Department of Employment Security, and are shown in Figure 18. In the Chicago area, the highest rate of occupational employment growth is expected to occur in Cook and DuPage counties, moderate increases in employment are expected to occur for Lake, Kane and Will counties, while the lowest rates of employment growth are expected in Kankakee, DeKalb, Kendall, and Grundy counties. In the Metro-East area, moderate employment growth is forecast for Madison County while relatively low employment growth is expected to occur in St. Clair, Monroe, Clinton, Jersey, Bond, Washington and Macoupin counties. Based on this study, Randolph County is expected to experience job losses in the future.

Traffic and Commuting Patterns

The Illinois Department of Transportation's (IDOT) Office of Planning and Programming publishes an annual report entitled *Illinois Travel Statistics*. This report provides much useful information on Illinois traffic, including Vehicle Miles Traveled (VMT) data by county, derived from IDOT's Traffic Count Program. Table 4 and Figures 19 and 20 summarize IDOT's estimates of Average Daily Vehicle Miles Traveled (ADVMT) in 2007, as calculated by IDOT's Highway Information System.

Table 4

Average Daily Vehicle Miles Traveled for Selected Counties from *Illinois Travel Statistics* 2007

Chicago Consolidated Statistical Area (CSA) County	Average Daily Vehicle Miles Traveled (ADVMT)
Cook	89,983,183
DuPage	23,653,693
Lake	15,747,091
Will	15,583,052
Kane	9,995,846
McHenry	6,071,071

Kankakee	2,638,934
DeKalb	2,389,212
Kendall	2,150,002
Oswego NAA Township	737,471
Grundy	1,904,904
Aux Sable NAA Township	394,274
Goose Lake NAA Township	47,695

St. Louis Metropolitan Statistical Area (MSA) County	Average Daily Vehicle Miles Traveled (ADVMT)
Madison	7,943,331
St. Clair	7,507,369
Montgomery*	1,402,503
Macoupin	1,170,604
Clinton	1,098,142
Washington*	1,088,059
Monroe	1,010,593
Bond	803,052
Randolph*	729,219
Jersey	539,760
Calhoun	111,684
** Montgomery, Randolph and Washington Counties are not part of the MSA*	

County ADVMT is calculated by dividing County Annual VMT by 365, the number of days in a year (366 in a leap year). The ADVMT on a segment of road is calculated by multiplying the Average Daily Traffic on the segment by the length of the segment in miles.

In the Chicago area, Cook, DuPage, Lake, and Will counties have the highest ADVMT. In fact, the ADVMT in these four counties account for approximately 85% of the total for the Illinois portion of the CSA. Collectively, Kankakee, DeKalb, Kendall, and Grundy counties account for about 5% of the total ADVMT in the CSA. In the 11 counties listed above, Madison, St. Clair, and Montgomery Counties have the highest ADVMT, and account for 72% of the VMT in the 11-county area. Randolph, Jersey, and Calhoun Counties have the lowest VMT, with about 6% of the 11 county total VMT. In addition, VMT has decreased in most of the State in the last few

years (see Figure 21 and 22), and was nearly the same in the existing 8-hour ozone nonattainment areas (NAAs) in 2007 as it was in 2002 and 2003.

The U. S. Census Bureau has compiled statistics from the 2000 census that quantify commuting patterns in the Chicago and St. Louis metropolitan areas. Figures 23 and 24 illustrate where people reside and the counties where they journey to work. Each county is color-coded on the histograms. For example, Cook County is shown in Figure 23 as a blue bar in each county's histogram. The data show that 2.07 million people reside in Cook County and commute within Cook County to reach their place of employment, but only 826 people reside in Cook County and commute to DeKalb County for employment. In some counties, a significant percentage of commuters travel to places of employment in other counties. For example, 146,135 residents of DuPage County commute to Cook County for employment. Similarly, a large percentage of commuters residing in Kendall County travel to Will and Kane counties for employment, although the number of commuters residing in Kendall County is small relative to the number of commuters in the Chicago CSA. From Figure 23, it is evident that more commuters in the Chicago CSA travel to places of employment in the county where they reside than travel to other counties. Commuting patterns in the St. Louis MSA (see Figure 24) are similar in that more commuters stay in their residence county for work than commute to surrounding counties.

Topography

Illinois is typified by flat to gently rolling terrain, with the exception of the Driftless Area in the northwest corner of the state and the Ozark Plateau in southern portion of the state (see Figure 25). Illinois occupies a land mass of approximately 55,584 square miles. The average elevation of the state is approximately 600 feet (183 m) above sea level. Charles Mound, located in Jo Davies County, is the highest point in the state with an elevation of 1,235 feet (376 m) above sea level. The lowest point in the state is 279 feet (85 m) above sea level along the Mississippi River in Alexander County. Total topographic relief across the state is less than 1000 feet, demonstrating the general flatness of the terrain. Topography is generally not a factor in determining pollutant transport in Illinois, and is not considered a significant issue in defining

the boundaries of the 8-hour ozone nonattainment areas.

Jurisdictional Boundaries

Jurisdictional boundaries considered in this analysis are consistent with recommended geographic boundaries or "presumptive boundary" definitions outlined in the ozone guidance documentation. Boundaries in this study reflect July 2003, OMB CSA and CBSA boundary definitions. Counties within the St. Louis, St. Charles-Farmington, MO-IL CSA within the state of Illinois are consistent with those counties included with the St. Louis MO-IL MSA. Additional counties are only included within Missouri under this St. Louis CSA definition. Proposed boundaries for nonattainment are consistent with existing 8-hour ozone nonattainment boundaries (1997 ozone NAAQS) as well as the previous 1-hour ozone NAA boundaries. Proposed ozone NAA areas in the Chicago CSA are the same as the current PM2.5 NAA boundaries and the proposed ozone St. Louis NAA includes three of the four counties in the PM2.5 NAA. Based on these geographic similarities it is expected that the coordination of planning activities required to address nonattainment designations can be carried out in a cohesive manner.

Meteorology

Illinois has a temperate climate, with cold winters and hot humid summers. The seasons are sharply differentiated between the northern and southern portions of the state, due to its elongated north-south orientation. Average winter temperatures are 22°F (–6°C) in the north and 37°F (3°C) in the south. Average summer temperatures are 70°F (21°C) in the north and 77°F (25°C) in the south. Illinois averages 36 inches (91 cm) of precipitation a year. Annual snowfall of 37 inches (94 cm) is normal for northern Illinois, decreasing to 14 inches (36 cm) or less in the southern portions of the state. The predominant wind direction across the state is from the south/southwest, with an average wind speed of approximately 11 miles per hour.

Monitors in the Chicago area that exceed the new ozone design value (2006-2008) show strong evidence of regional influences based on previous data analyses and modeling. Figure 26, contains a pollution rose based on the three year period from 2006–2008 which supports this contention. This pollution rose incorporates Alsip wind data for days with monitored exceedances. Exceedances may occur at one or more monitoring site(s) on a given day. The length of each blue or red line represents the percentage of time that the wind blew from a particular direction on days when ozone concentrations were > 75 ppb. Based on this information, the predominant wind direction ranged from south to southwest on high concentration days instead of from the urban core to the north.

In the Metro-East Area, regional influences have been shown through previous modeling studies to be a significant factor contributing to monitored violations of the ozone standard. The pollution rose for the Metro-East area representing Edwardsville winds and Illinois Metro-East monitoring sites shows predominant wind directions ranging from south to south-southeast (see Figure 27) on days with elevated levels of ozone. These wind directions indicate that a substantial portion of the regional background is coming from sources in the Ohio River Valley and the southeastern U.S.. Meteorology for all Metro-East sites on high days > 75ppb identifies the same general wind conditions (see Figure 27).

Level of Control of Emission Sources

Emission control measures which have been promulgated at the federal and state levels, in combination with court-approved consent decrees, have impacted emission levels from a wide spectrum of emission sectors in the Metro-East St. Louis area. These have led to significant air quality improvements. Further emission reductions through planned or pending rulemakings are expected to enhance these air quality gains. Principal among existing and pending emission reduction measures include the following:

Electricity-Generating Power Plants

- Clean Air Act Title IV (Phases I and II)
- NOx SIP Call
- Illinois Multi-Pollutant Strategy (MPS/CPS)
- Clean Air Interstate Rule (CAIR)
- Dynegy Midwest Generation Consent Decree

Other Stationary Point Sources

- NSPS and NESHAPS/MACT
- ConocoPhillips Consent Decree
- NOx RACT Rulemaking (not yet adopted by IPCB)

Area Sources

- Aerosol Coatings, AIM Coatings, Household and Institutional Consumer Solvents
- Portable Fuel Containers

On-Highway Mobile Sources

- Tier 2 Motor Vehicle Standards / Gasoline Sulfur Requirements
- Heavy-Duty Engine Standards / Highway Diesel Sulfur Requirements
- Reformulated Gasoline
- Vehicle Inspection & Maintenance Program
- Evaporative Large Spark Ignition and Recreational Vehicle Standards

Off-Highway Mobile Sources

- Tier 4 Nonroad Diesel Engines / Diesel Sulfur Requirements
- Marine Compression-Ignition Standards
- Locomotive Engine Standards

Permitting activities result in issuance of new construction permits which add to ambient ozone precursor emission levels. Typically, state-of-the-art emission controls are required on these new emission sources before they can operate, and thus greatly limit additional ozone precursor loadings due to new construction. The Prairie State Generating Company, LLC mine-mouth coal-fired power plant that is currently under construction in Washington County, Illinois, underwent a rigorous regulatory review prior to receiving a Prevention of Significant Deterioration permit. Boiler operations and virtually all other emission sources at this facility are subject to stringent emission control levels. Similarly stringent emission limitations have been

placed on other new construction and operating permits for industrial facilities in counties adjoining or within the Metro-East area.

RECOMMENDATIONS

The CAA does not specify the geographic boundaries, size, or the extent to which source contributions would require that an area be designated as nonattainment for the 8-hour ozone standard, nor has U.S. EPA promulgated rules prescribing such. IEPA's recommendations are consistent with a guidance memorandum provided by U.S. EPA (December 4, 2008), and are based on an evaluation of present and projected air quality, the distribution of precursor emissions, and other factors. The IEPA recognizes that each of the factors considered in this evaluation are not necessarily conclusive when evaluated individually. Rather, IEPA's recommendations are based on consideration of all of the data and projections taken together. Documentation of data sources utilized in this analysis is shown in Table 6.

IEPA's recommendations for attainment/nonattainment designations in Illinois for the 8-hour ozone ambient air quality standards are contained in Table 7. Current air quality data collected by the IEPA indicate that the only areas of Illinois where the 8-hour ozone air quality standard is not being met are in portions of the Chicago and Metro-East metropolitan areas. Nonattainment designations for at least portions of these metropolitan areas are, therefore, warranted. The IEPA's recommendation for inclusion of counties within the boundaries of the nonattainment areas are discussed in the following section and geographically depicted in Figure 28.

Chicago Metropolitan Area

***Cook County*:** Cook County is the only county in northeastern Illinois where current air quality data (2006-2008) does not meet the 8-hour ozone standard (Alsip monitor). Cook County is currently designated nonattainment for the existing 8-hour ozone standard as well as the previous 1-hour ozone standard. In terms of precursor emissions, Cook County has the highest levels of both VOC and NOx emissions of any of the ten counties in the CSA. Demographically, Cook County has the highest population, the highest population density, and the largest acreage of

urban land cover of all the counties in the CSA. The IEPA, therefore, recommends Cook County be included in the Chicago nonattainment area for the 8-hour ozone standard.

Lake County: Lake County is currently designated nonattainment for the existing 8-hour ozone standard as well as the previous 1-hour ozone standard. Lake County has high levels of precursor emissions, relatively high total population and population density, a high percentage of urban land cover, and high levels of vehicular traffic. The IEPA, therefore, recommends that Lake County be included in the Chicago nonattainment area for the 8-hour ozone standard.

DuPage and Will Counties: Both DuPage and Will Counties are currently designated nonattainment for the current 8-hour standard as well as the previous 1-hour ozone standard. DuPage and Will Counties have some of the highest levels of precursor emissions in the Chicago CSA. DuPage County is second only to Cook County in total population, population density, vehicular traffic, and total urban land cover. Similarly, Will County has a relatively high population, population density, population growth, traffic level, and urban land coverage. The IEPA, therefore, recommends that DuPage and Will Counties be included in the Chicago nonattainment area for the 8-hour ozone standard.

McHenry and Kane Counties: McHenry and Kane Counties are on the western fringe of the metropolitan area with the eastern portions of these counties having an urban/suburban character, while the western portions are basically rural. These counties have moderate levels of precursor emissions relative to Cook, Lake, DuPage, and Will Counties, and the total population, population density, and total urban land cover in these counties are also relatively moderate. McHenry and Kane Counties are experiencing moderate population and employment growth. Both McHenry and Kane Counties are currently designated nonattainment for the existing 8-hour ozone standard as well as the previous 1-hour standard. The IEPA, therefore, recommends that McHenry and Kane Counties be included in the Chicago nonattainment area for the 8-hour ozone standard.

DeKalb and Kankakee Counties: DeKalb and Kankakee Counties were added to the list of CSA counties by the U.S. Census Bureau in 1998 and were not included in the Chicago nonattainment area for the previous 1-hour ozone standard. They were also classified as attainment for the 1997 8-hour ozone standard. These counties are primarily rural, as shown by their low 2007 population totals and population densities, and the small amount of urban land cover in each county is not contiguous with the Chicago urbanized area. Current precursor emission levels in these counties are also low, compared to the other counties in the CSA. For these reasons, the IEPA recommends that DeKalb and Kankakee Counties not be included in the nonattainment area and that they be designated as attainment for the 8-hour NAAQS for ozone.

***Grundy and Kendall Counties*:** Oswego Township in Kendall County and Goose Lake and Aux Sable Townships in Grundy County are included in the existing 8-hour ozone NAA. Due to their primarily rural character, most of Grundy and Kendall Counties were not included in the previous Chicago 1-hour nonattainment area, the boundaries of which were established subsequent to the 1990 Amendments to the CAA. Certain townships in Grundy and Kendall Counties were included in the previous 1-hour nonattainment area due to the significance of certain stationary, or point, sources as indicated by the IEPA's 1990 emissions inventory. Precursor emission levels in the remaining portions of these counties are low, as is the total population, population density, traffic volumes, and total urban land cover. For these reasons, the IEPA recommends that Oswego Township in Kendall County and Goose Lake and Aux Sable Townships in Grundy County be included in the Chicago nonattainment area for the 8-hour NAAQS for ozone, but that the remainder of these two counties should retain their current classification of attainment.

St. Louis Metropolitan Area

Madison County: Madison County is the only county in the St. Louis MSA where current air quality data (2006-2008) does not meet the 8-hour ozone standard (3 monitors). Madison County is currently designated nonattainment for the existing 8-hour standard and a maintenance area for the previous 1-hour ozone standard. In terms of precursor emissions, Madison County has the

highest levels of both VOC and NOx emissions of any of the counties in the Metro-East. Demographically, Madison County has the highest population, the second highest population density, the largest acreage of urban land cover and highest volume of traffic of all the counties in the Metro-East. Madison County should be included in the St. Louis Metro-East nonattainment area for the 8-hour standard.

St. Clair County: Air quality data from the most recent 3-year period (2006-2008) indicate that St. Clair County currently meets the new 8-hour ozone standard. However, it is currently designated nonattainment for the 1997 8-hour standard and a maintenance area for the previous 1-hour ozone standard. St. Clair County has relatively high levels of both VOC and NOx emissions, relatively high total population and population density, and a large percentage of urban land cover. St. Clair County is expected to experience negative population growth and moderate employment growth in future years. The IEPA, therefore, recommends that St. Clair County be included in the St. Louis Metro-East nonattainment area for the 8-hour standard.

Monroe County: Monroe County is on the southern fringe of the Metro-East area with the northern portions of the county having an urban/suburban character, while the southern and eastern portions of the county are basically rural. It is currently designated as nonattainment for the 1997 8-hour standard as well as a maintenance area for the previous 1-hour ozone standard. This county has relatively low levels of precursor emissions relative to Madison and St. Clair Counties, and the total population, population density, and total urban land cover is also relatively low. Because of its existing status as an ozone NAA for the 1997 NAAQS and its previous designation as a 1-hour ozone maintenance area, the IEPA recommends that Monroe County be included in the St. Louis Metro-East nonattainment area for the 8-hour ozone standard.

Jersey County: Jersey County is a rural county located to the north of St. Louis, and is currently attaining the 8-hour ozone standard. This county has low levels of precursor emissions, low population and population density, low urban land cover, low population and employment growth rates as well as low volumes of traffic. The character of Jersey County is distinctly

different from the St. Louis metropolitan area and air quality data from the most recent 3-year period (2006-2008) indicates that Jersey County is meeting the 8-hour ozone standard. Jersey County is downwind from the violating monitor and therefore, does not contribute to violations in the proposed NAA. For this reason, the IEPA recommends that Jersey County be designated as attainment for the 8-hour NAAQS for ozone.

Clinton County: As mentioned previously, the current (1998) MSA boundaries established by the Office of Management and Budget, for St. Louis include Clinton County, Illinois. Clinton County was not contained within the previous 1-hour ozone nonattainment area. This county is primarily rural, with low 2007 population totals and population densities, and small amounts of urban land cover, compared to other counties in the MSA. Current precursor emission levels in Clinton County are low, as are expected rates of population and employment growth. For these reasons, the IEPA recommends that Clinton County be designated as attainment for the 8-hour NAAQS for ozone.

***Randolph County*:** Randolph County is not part of the St. Louis MSA as defined by the Office of Management and Budget. It is not included as part of the existing 8-hour ozone NAA and was not contained within the previous 1-hour ozone nonattainment area. This rural county has low population and population density, low urban land cover, and low population and employment growth rates. Randolph County has high levels of precursor emissions of NOx, virtually all of which are emitted from an existing, stationary emission source, the Baldwin Power Station. The Baldwin Power Station is subject to Illinois multi-pollutant strategy controls as well as a federal consent order which will significantly reduce NO_x emissions in future years. For these reasons, the IEPA recommends that Randolph County be designated as attainment for the 8-hour NAAQS for ozone.

Macoupin, Bond and Calhoun Counties: Bond, Calhoun and Macoupin counties were added to the St. Louis MO-IL MSA as defined by the U.S. Census Bureau, in 2003. All three counties are not included in the existing 8-hour ozone nonattainment area. These counties are primarily rural, with low 2007 population totals and population densities, and have small amounts of urban land

cover, compared to other counties in the St. Louis MSA. Current precursor emission levels in Macoupin, Bond and Calhoun counties are low, as are expected rates of population, employment growth and VMT. For these reasons, the IEPA recommends that Macoupin, Bond and Calhoun counties be designated as attainment for the NAAQS for 8-hour ozone.

***Montgomery County*:** Montgomery County is not included in the existing 8-hour ozone nonattainment area, nor is it part of the St. Louis MSA. The county is not contiguous with the Metro-East urbanized area and does not influence population and economic growth in the MSA. Based on 2005 emissions data high precursor emission totals are the results of a large electric utility source which is more than 40 miles away from the violating monitor and is downwind from the Metro-East area. Further, this source is subject to Illinois multi-pollutant requirements which will greatly reduce NO_x emissions in future years. For these reasons, the IEPA recommends that Montgomery County not be included in the nonattainment area and that it be designated as attainment for the NAAQS for 8-hour ozone.

Washington County: Washington County is not included in the existing 8-hour ozone nonattainment area, nor is it part of the St. Louis MSA. Washington County is considered adjacent to St. Clair County; however the county is not contiguous with the Metro-East urbanized area and exhibits low population, VMT and economic influence. Current precursor emission levels in these counties are very low, compared to the other counties evaluated for this analysis, although a new electric generating unit is being constructed that will increase emissions in the near future. This source has been permitted under the Prevention of Significant Deterioration program which requires the installation of Best Available Control Technology. For these reasons, the IEPA recommends that Washington County not be included in the nonattainment area and that it be designated as attainment for the NAAQS for 8-hour ozone.

Remainder of Illinois

Areas of the state that are not part of these two metropolitan areas are in attainment with the 8-hour ozone NAAQS, and it is recommended that all remaining counties be designated as attainment.

Table 5
Recommended Attainment/Nonattainment Designations in Illinois
For the 8-hour Ozone National Ambient Air Quality Standard

County	Designation	Name of Area
Cook	Nonattainment	Chicago
DuPage	Nonattainment	Chicago
Kane	Nonattainment	Chicago
Lake	Nonattainment	Chicago
Will	Nonattainment	Chicago
McHenry	Nonattainment	Chicago
Kendall:		
Oswego Township	Nonattainment	Chicago
All Other Townships	Attainment	
Grundy:		
Aux Sable Township	Nonattainment	Chicago
Goose Lake Township	Nonattainment	Chicago
All Other Townships	Attainment	
Madison	Nonattainment	Metro-East
Monroe	Nonattainment	Metro-East
St. Clair	Nonattainment	Metro-East
All Other Counties	Attainment	

Table 6
8-hour Ozone NAA Boundary Recommendation
Nine Factor Documentation
March 9, 2009

Factor	Data Analysis	Data Source	Date of Study
1. Air Quality Data- Monitoring	Ozone 2006-2008 Design Values at individual monitors (statewide)	IEPA BOA Database, Air Monitoring Section	2006-2008
2. Emissions Data	Emission inventory information for pollutants: NO_x, and VOC within the Chicago CSA and St. Louis MSA/CSA and adjacent counties. Emission totals (tons/year) are summarized by county for point, area, on-road/mobile, and off-road sectors	IEPA 2005 Reported Inventory	2005
	Source locations in non-attainment areas and adjacent counties	IEPA BOA database	2005
3. Population Density and Degree of Urbanization	Annual Estimates of the Population in Illinois. Total population and population density estimates* Urbanized area boundaries	Table1:Annual Estimates of the Population for Counties of Illinois: July 1, 2000 to July, 2007 (CO-EST2007-03-22) Population Division, U.S. Census Bureau; ESRI Maps and Data	Release date: 2007
4. Expected Growth Rates and Patterns	Total population change based on Long-Term population projection ** Total occupational employment change based on Long Term study**	Illinois Department of Commerce and Economic Opportunity: Illinois Population Trends 2000-2030 Illinois Department of Employment Security	2000-2030 Population Projection Table - 2005 edition 2004-2014 Occupational Employment Projections by County – 2005 edition
5. Traffic and Commuting Patterns	Average Daily Traffic tables for 2007 County to County Commuting Workflow files table	Illinois Department of Transportation, Travel Statistics 2007; U.S. Census Bureau	2007 2000

6. Topography	relatively flat	Google Earth; U.S. Geological Survey	2007 (data is about one to three years old and updated on a regular basis– no set year is given)
7. Jurisdictional Boundaries	MSA/CBSA/CSA boundary information;	Office of Management and Budget; (in conjunction with U.S. Census Bureau)	2003; April 2005
8. Meteorology	Weather patterns – Pollution/Wind Rose, Regionally Influenced High days	Chris Price (Air Monitoring Section); Illinois State Water Survey	2006-2008
9. Level of Control of Emission Sources	Existing and expected controls	IEPA – BOA Programs	2008

* http://www.census.gov

** http://www.commerce.state.il.us/dceo/Bureaus/Facts_Figures

Figure 1

Proposed Illinois 8-hour Ozone Nonattainment Areas within CSA/MSA

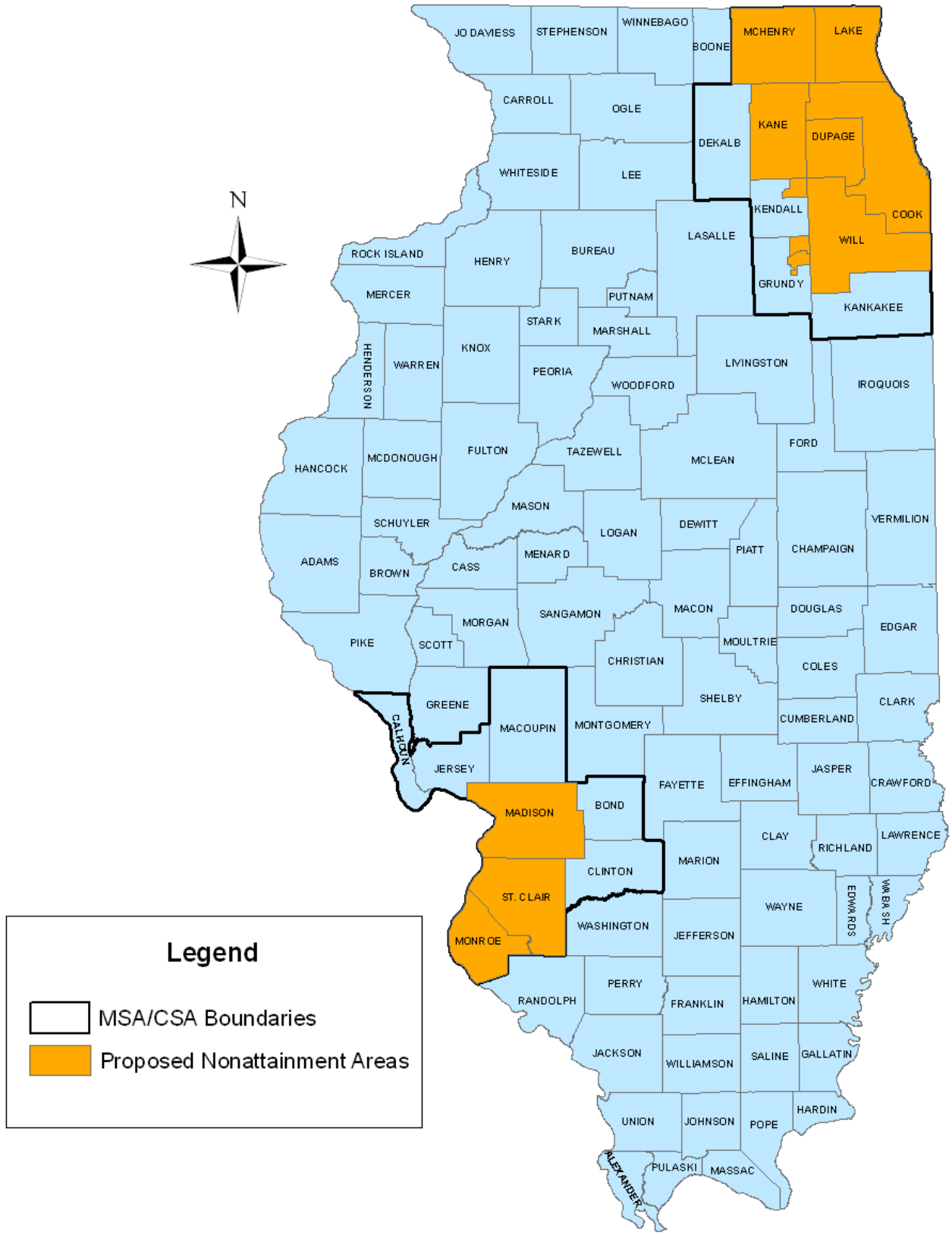


Figure 2

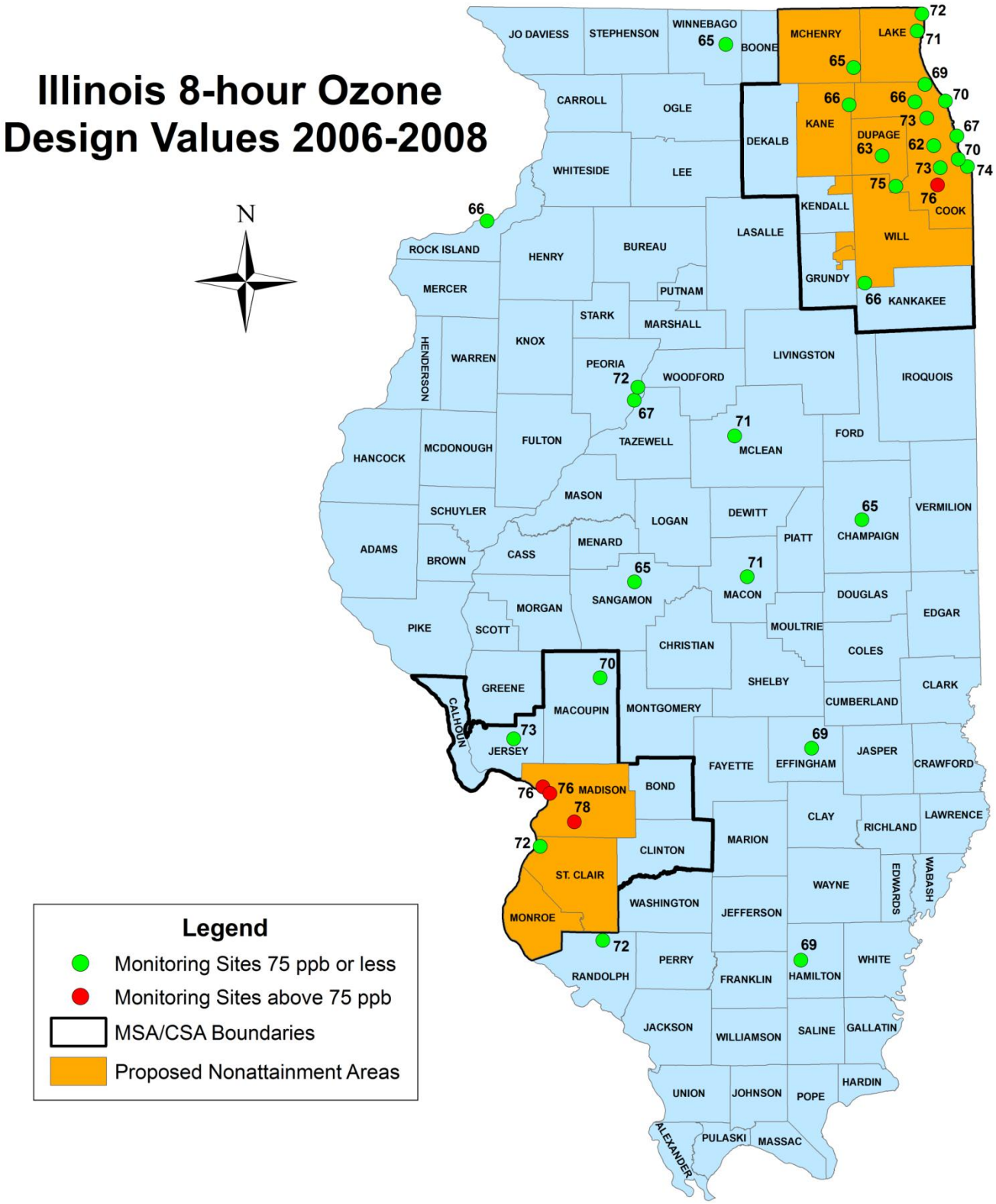


Figure 3

2006-2008 Lake Michigan 8-Hour Ozone Design Values

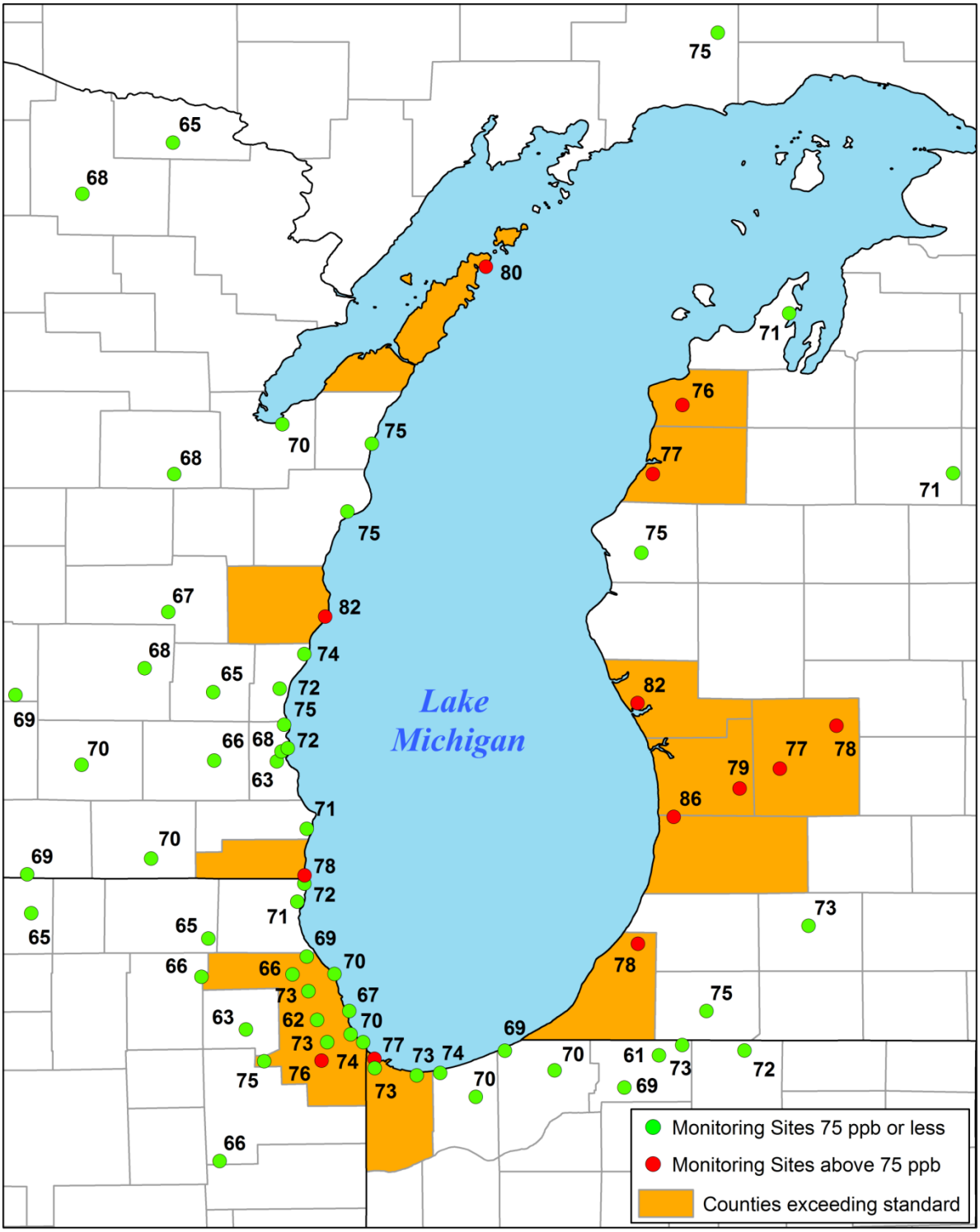


Figure 4

2006-2008 St. Louis, MO
8-Hour Ozone Design Values

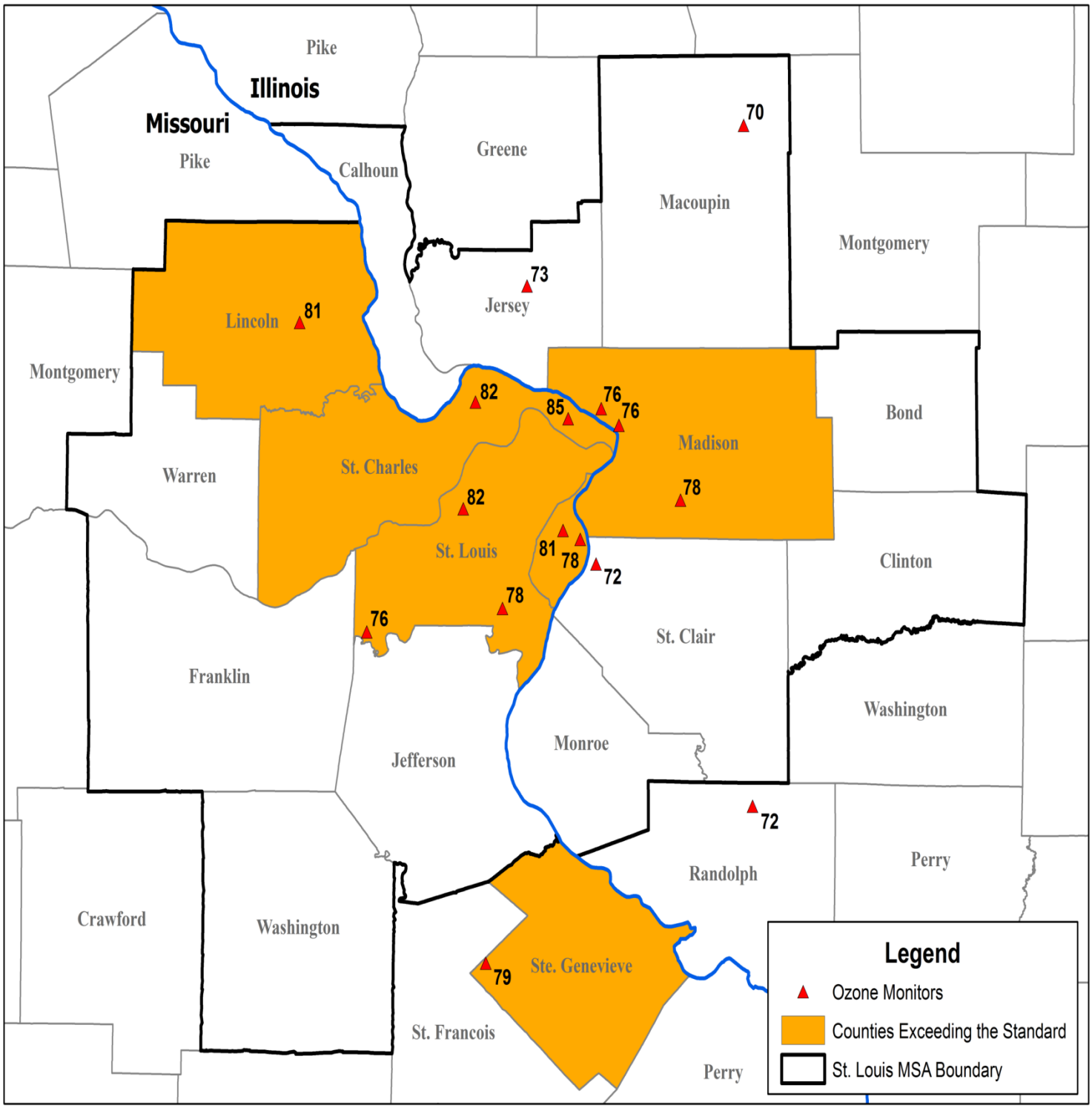
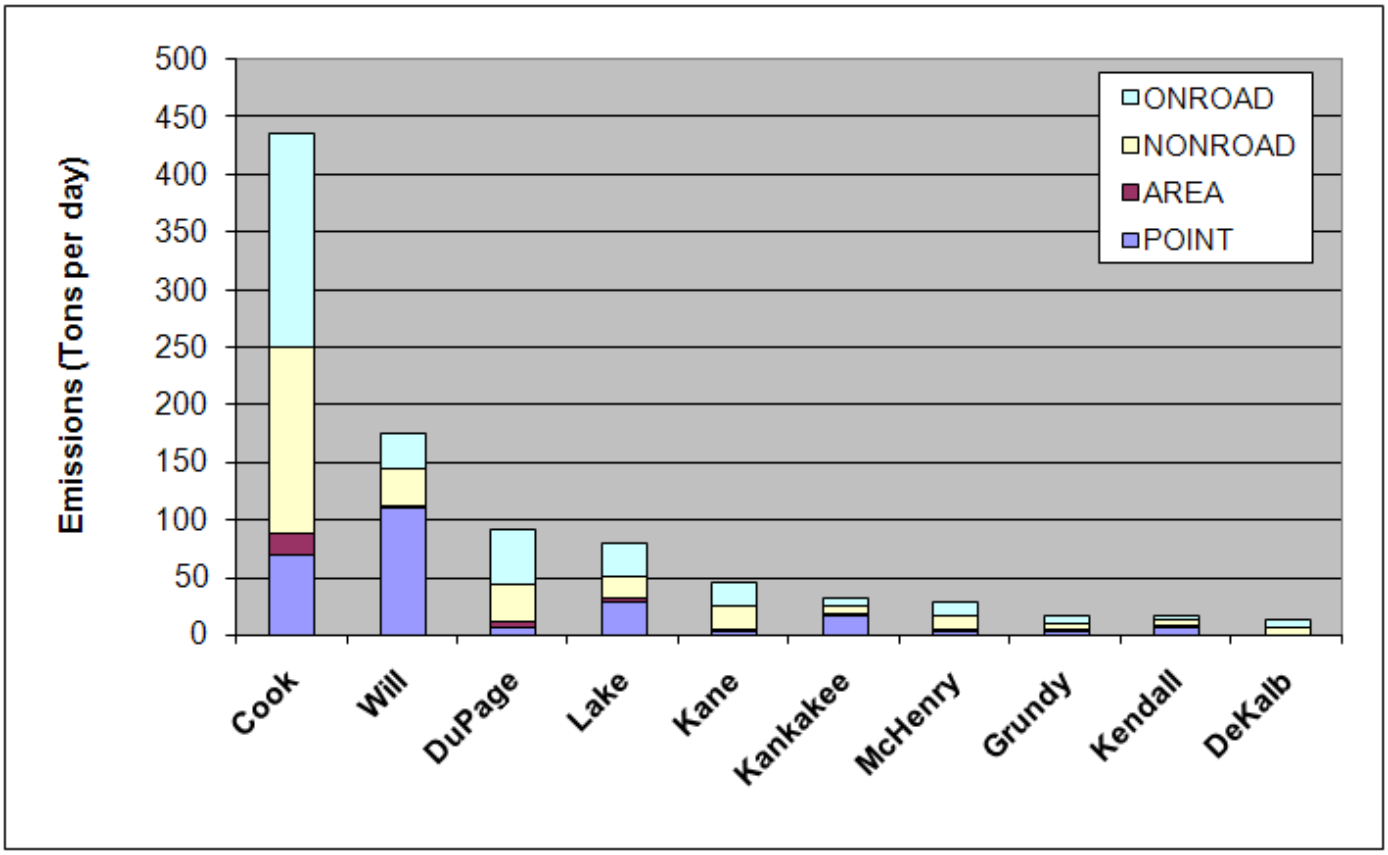


Figure 5a

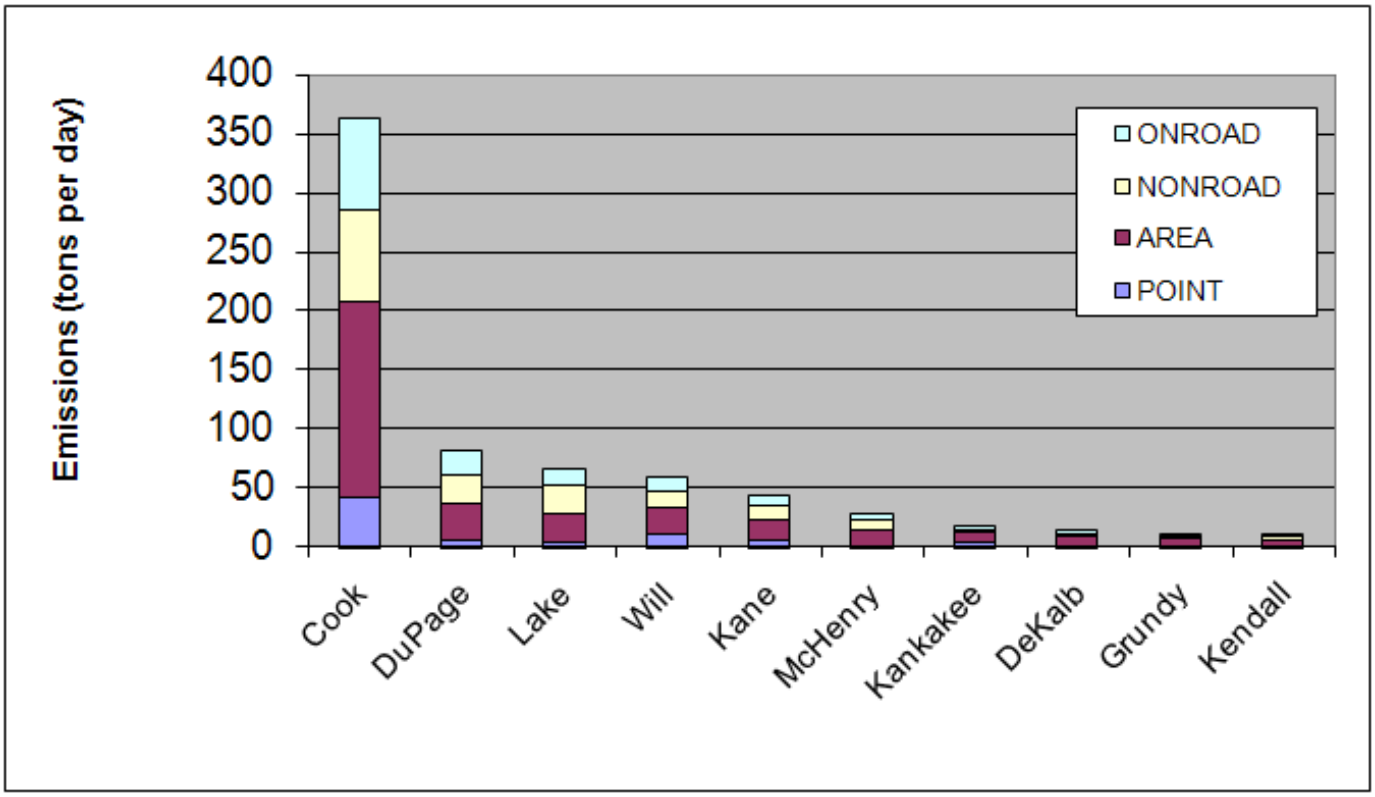
2005 NOx Emissions by County for the Chicago CSA (Tons/Day)



NO_x					
COUNTY	POINT	AREA	NONROAD	ONROAD	Total Tons/Day
Cook	68.42	19.98	161.61	186.16	436.17
Will	110.06	1.16	33.08	31.25	175.55
DuPage	5.72	5.03	33.33	47.02	91.10
Lake	27.47	3.61	18.64	30.47	80.19
Kane	2.67	1.89	19.63	20.47	44.66
Kankakee	17.2	0.28	7.51	6.75	31.74
McHenry	2.32	1.44	12.08	11.91	27.75
Grundy	3.51	0.11	5.72	6.65	15.99
Kendall	7.11	0.30	4.55	3.59	15.55
DeKalb	0.65	0.32	5.6	6.07	12.64

Figure 5b

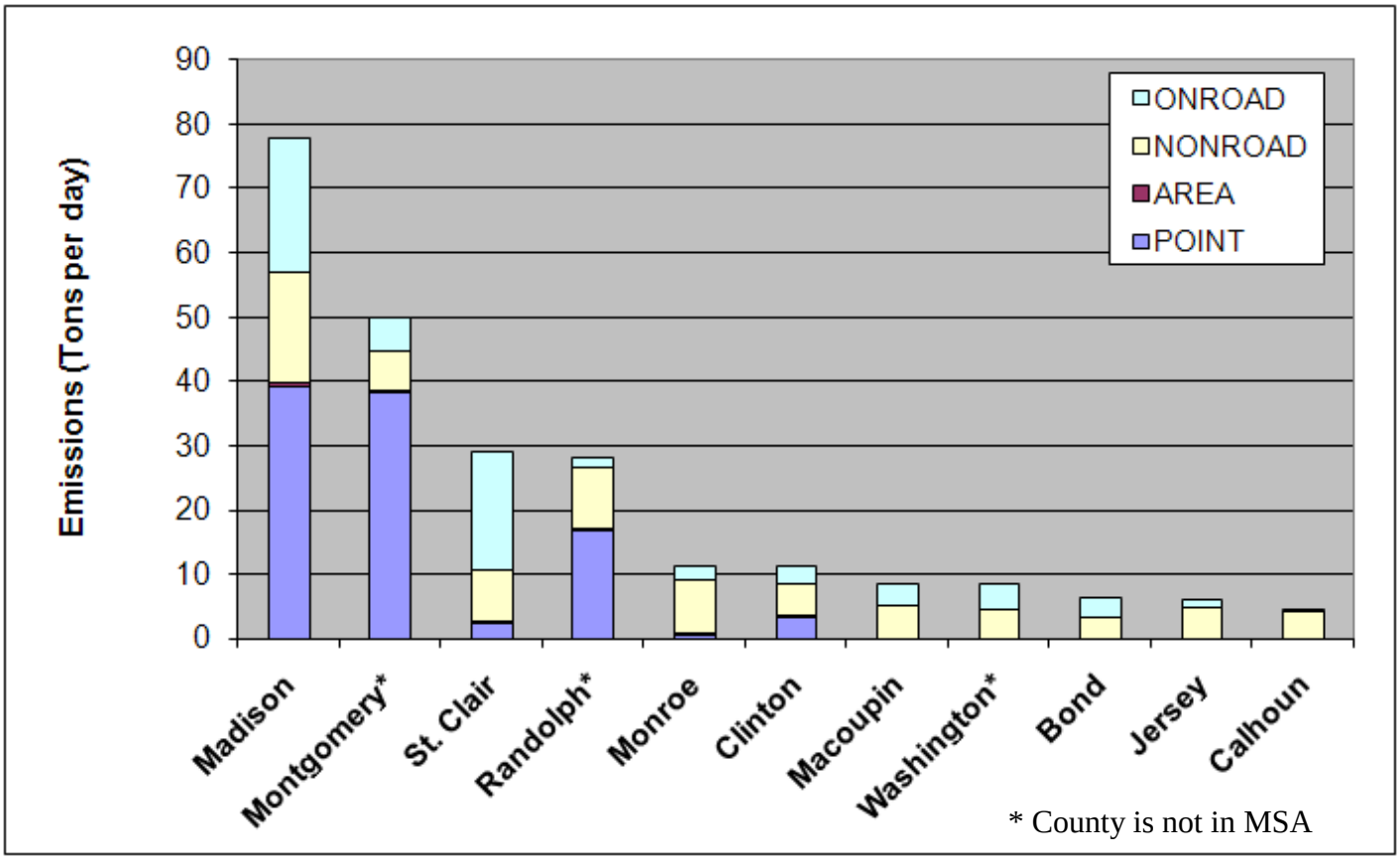
2005 VOC Emissions by County for the Chicago CSA (Tons/ Day)



VOC					
COUNTY	POINT	AREA	NONROAD	ONROAD	Total Tons/Day
Cook	40.80	166.99	77.44	77.91	363.14
DuPage	5.58	31.05	24.52	19.68	80.83
Lake	3.63	23.49	24.20	13.43	64.75
Will	10.04	22.76	13.49	12.56	58.85
Kane	4.91	16.64	12.47	8.51	42.53
McHenry	2.29	11.45	7.88	5.34	26.96
Kankakee	3.90	7.69	2.36	3.58	17.53
DeKalb	1.02	7.44	1.78	3.29	13.53
Grundy	2.48	3.87	2.51	2.19	11.05
Kendall	1.41	4.47	2.82	2.31	11.01

Figure 6a

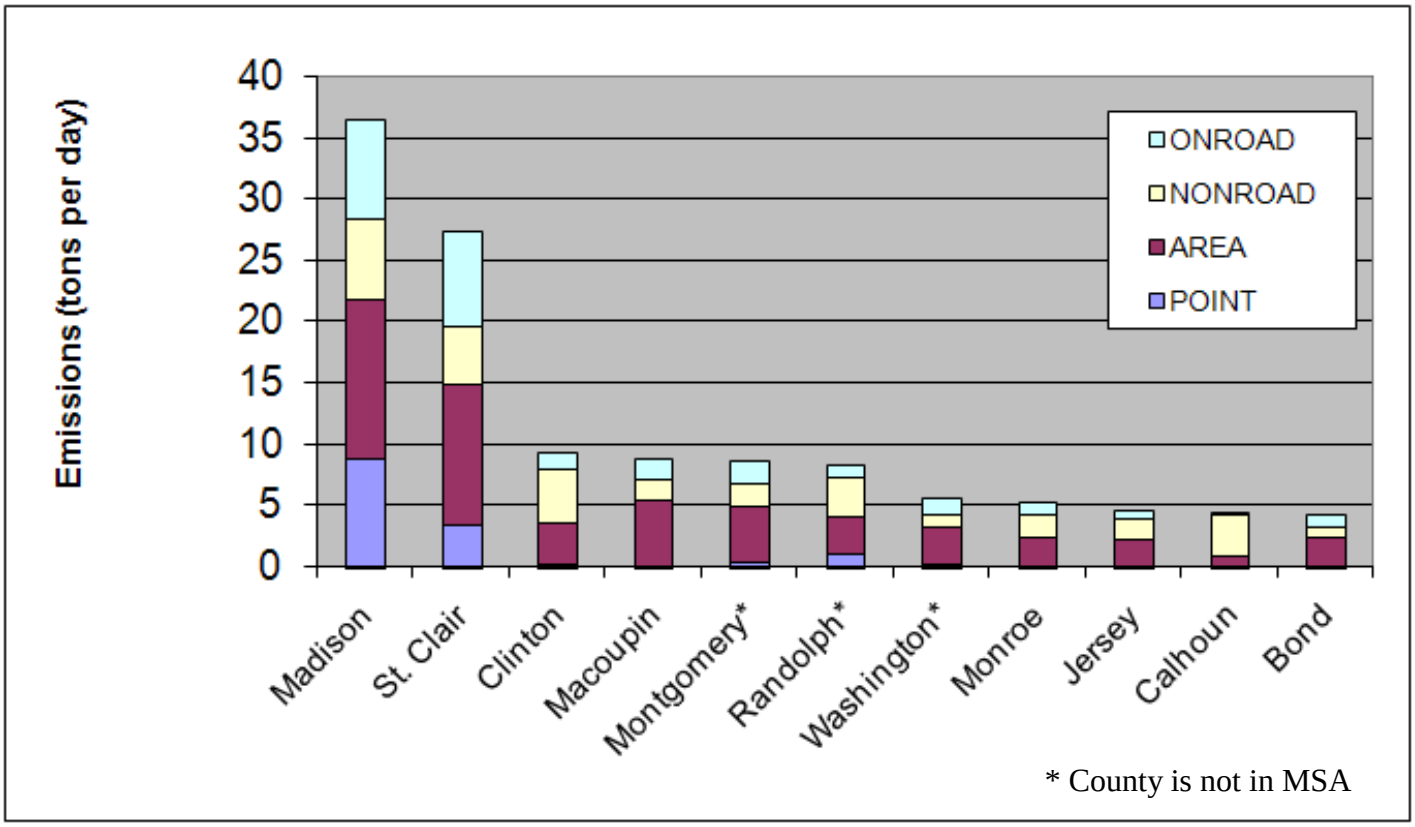
2005 NOx Emissions by County for the St. Louis MSA (Tons /Day)



NO_x					
COUNTY	POINT	AREA	NONROAD	ONROAD	Total Tons/Day
Madison	39.10	0.59	17.31	20.88	77.88
Montgomery*	38.41	0.12	6.19	5.14	49.86
St. Clair	2.17	0.56	7.75	18.54	29.02
Randolph*	16.78	0.19	9.57	1.56	28.10
Monroe	0.75	0.08	8.16	2.34	11.33
Clinton	3.57	0.11	4.76	2.75	11.19
Macoupin	0.06	0.14	4.74	3.42	8.36
Washington*	0.04	0.08	4.21	3.98	8.31
Bond	0.06	0.05	3.00	3.08	6.19
Jersey	0.00	0.05	4.69	1.16	5.90
Calhoun	0.00	0.01	4.10	0.22	4.33

Figure 6b

2005 VOC Emissions by County for the St. Louis MSA (Tons /Day)



VOC					
COUNTY	POINT	AREA	NONROAD	ONROAD	Total Tons/Day
Madison	8.78	13.02	6.67	8.14	36.61
St. Clair	3.46	11.47	4.73	7.73	27.39
Clinton	0.31	3.29	4.33	1.43	9.36
Macoupin	0.11	5.38	1.63	1.64	8.76
Montgomery*	0.40	4.59	1.78	1.86	8.63
Randolph*	1.12	3.03	3.16	1.03	8.34
Washington*	0.25	3.01	1.01	1.31	5.58
Monroe	0.13	2.30	1.77	1.16	5.36
Jersey	0.08	2.23	1.56	0.78	4.65
Calhoun	0.00	0.88	3.47	0.15	4.50
Bond	0.11	2.23	0.96	1.06	4.36

Figure 7a

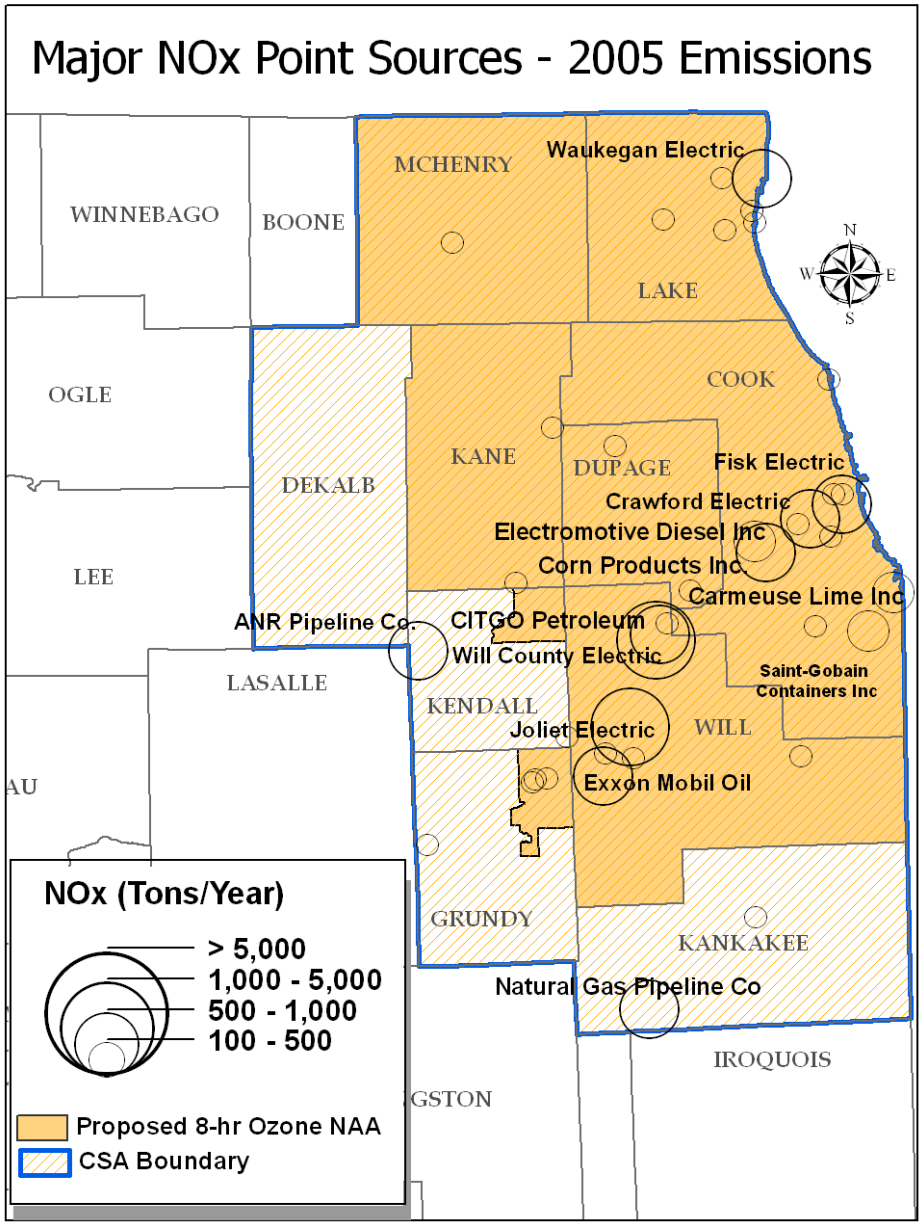


Figure 7b

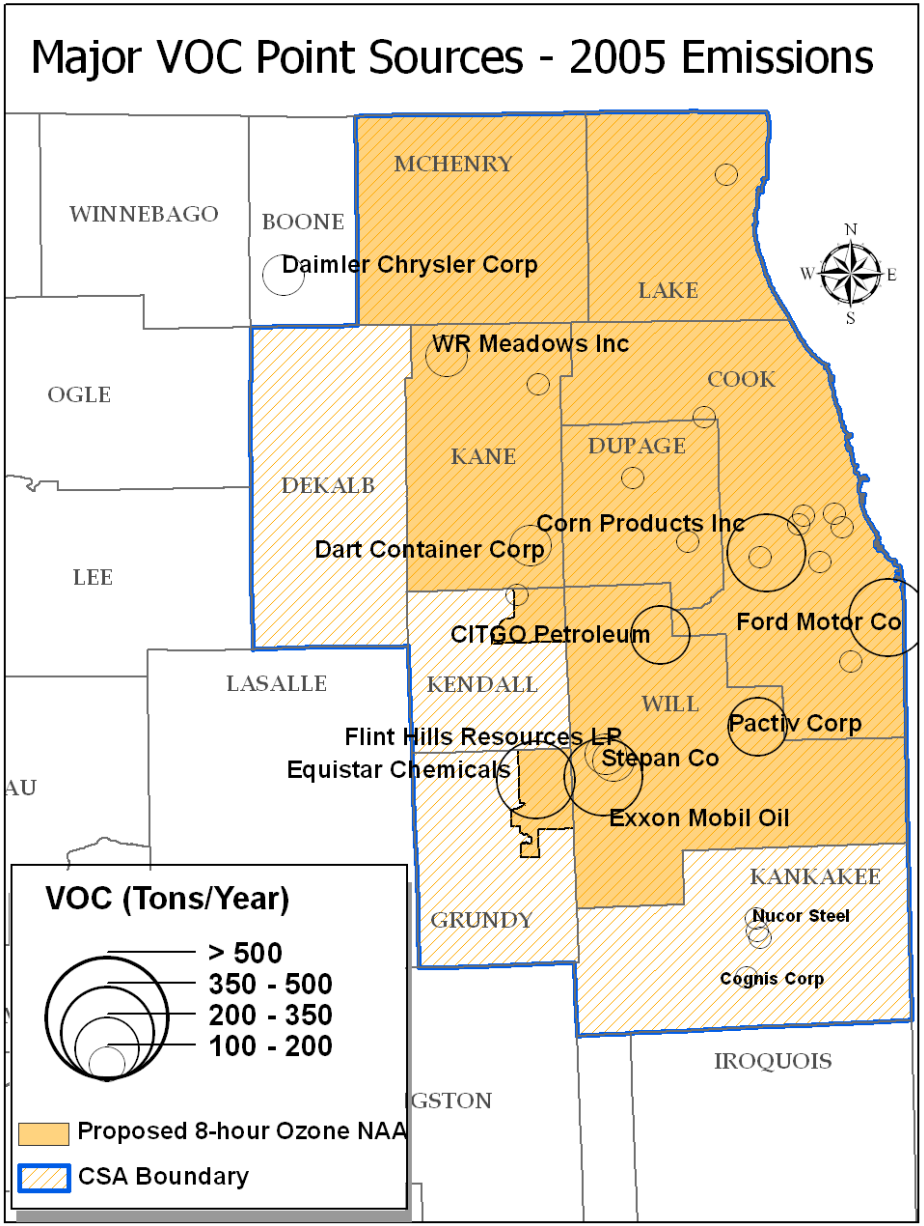


Figure 8a

Major NOx Point Sources - 2005 Emissions

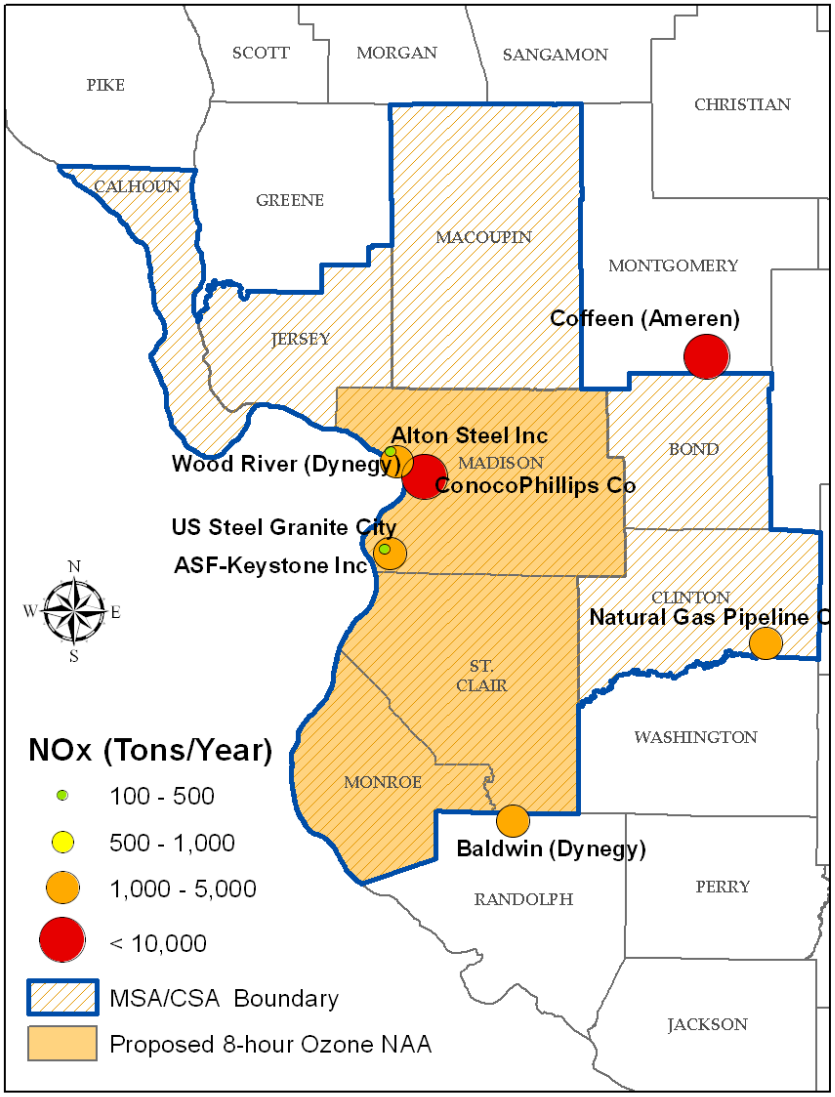


Figure 8b

Major VOC Point Sources - 2005 Emissions

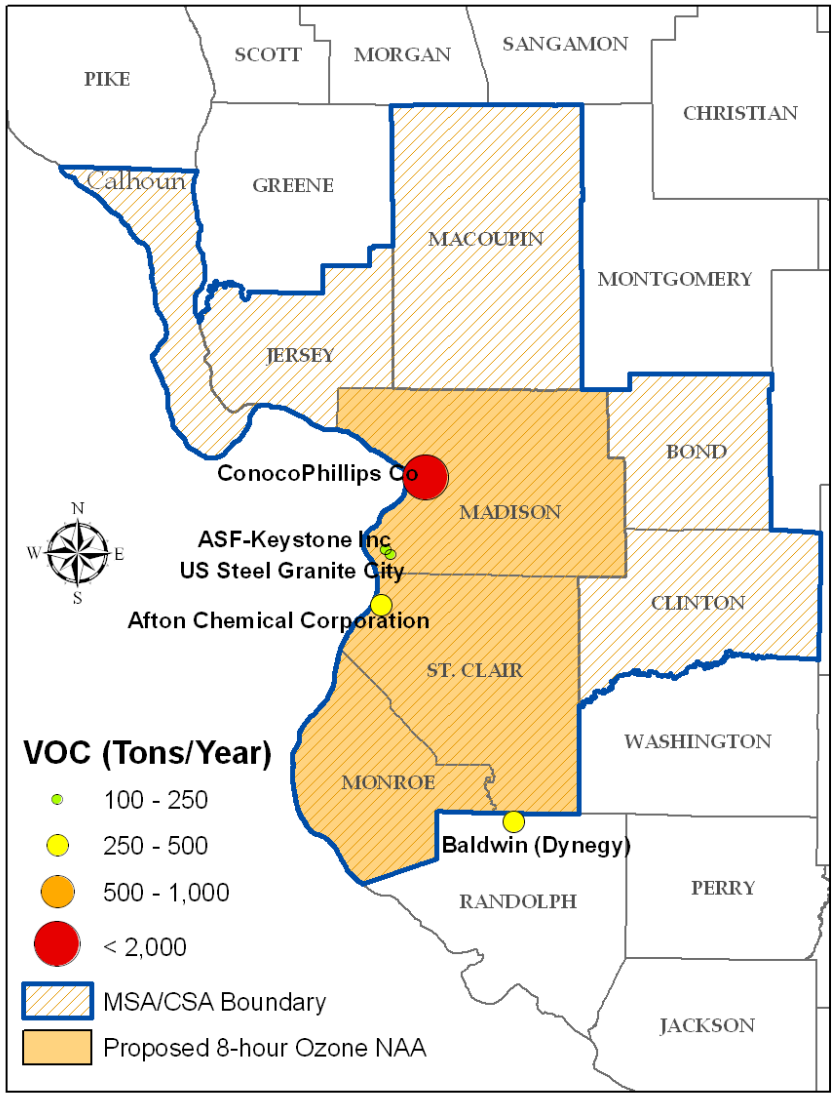


Figure 9

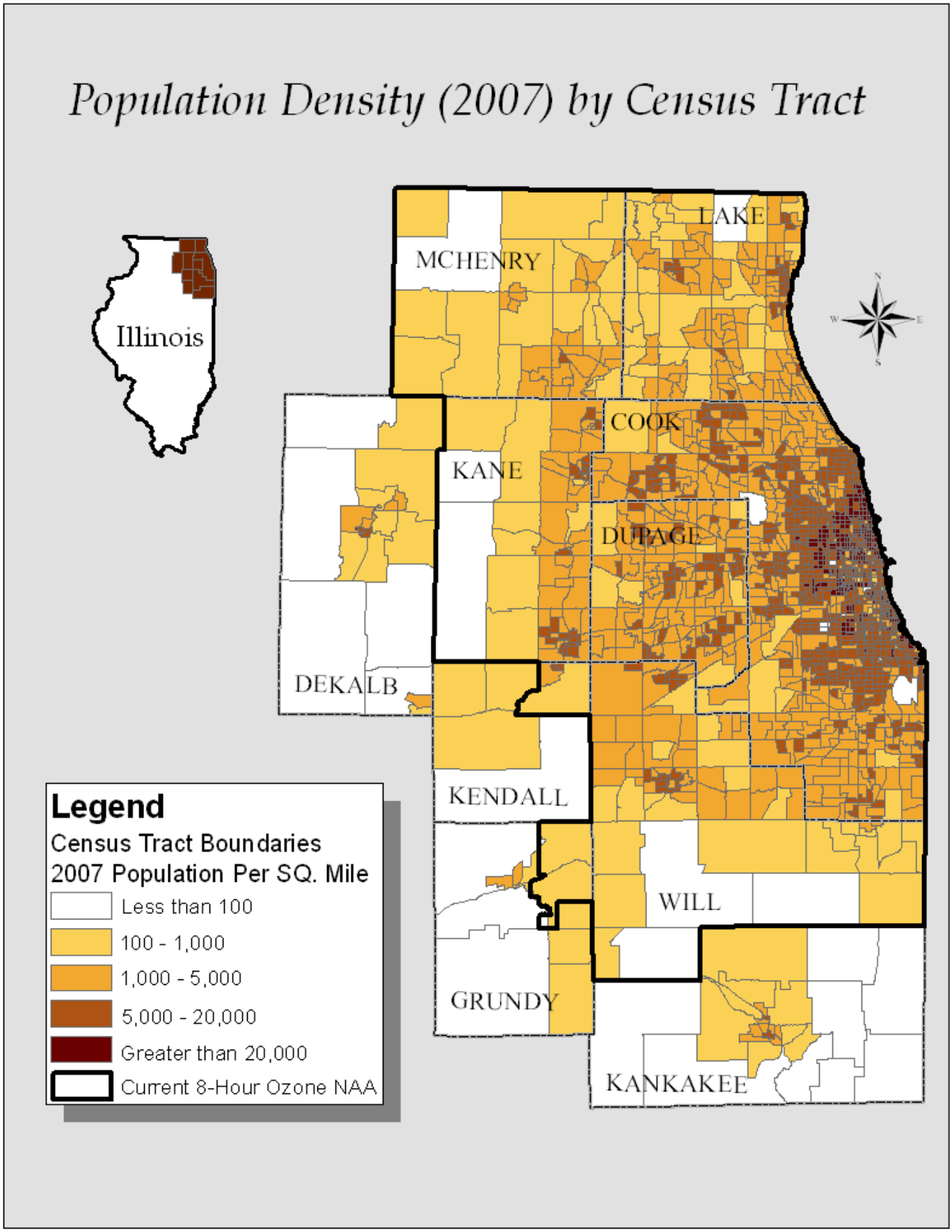


Figure 10

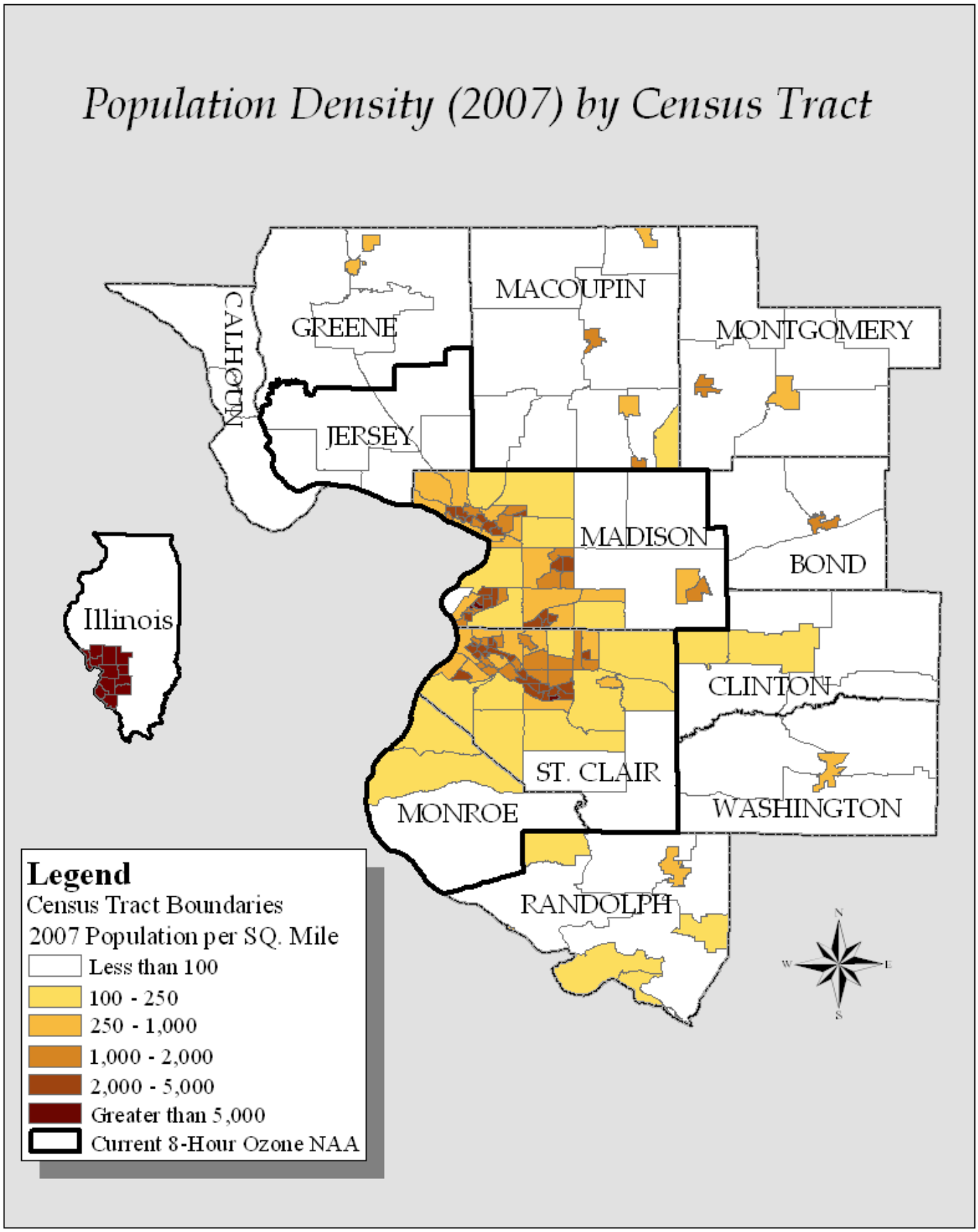


Figure 11

Figure 12

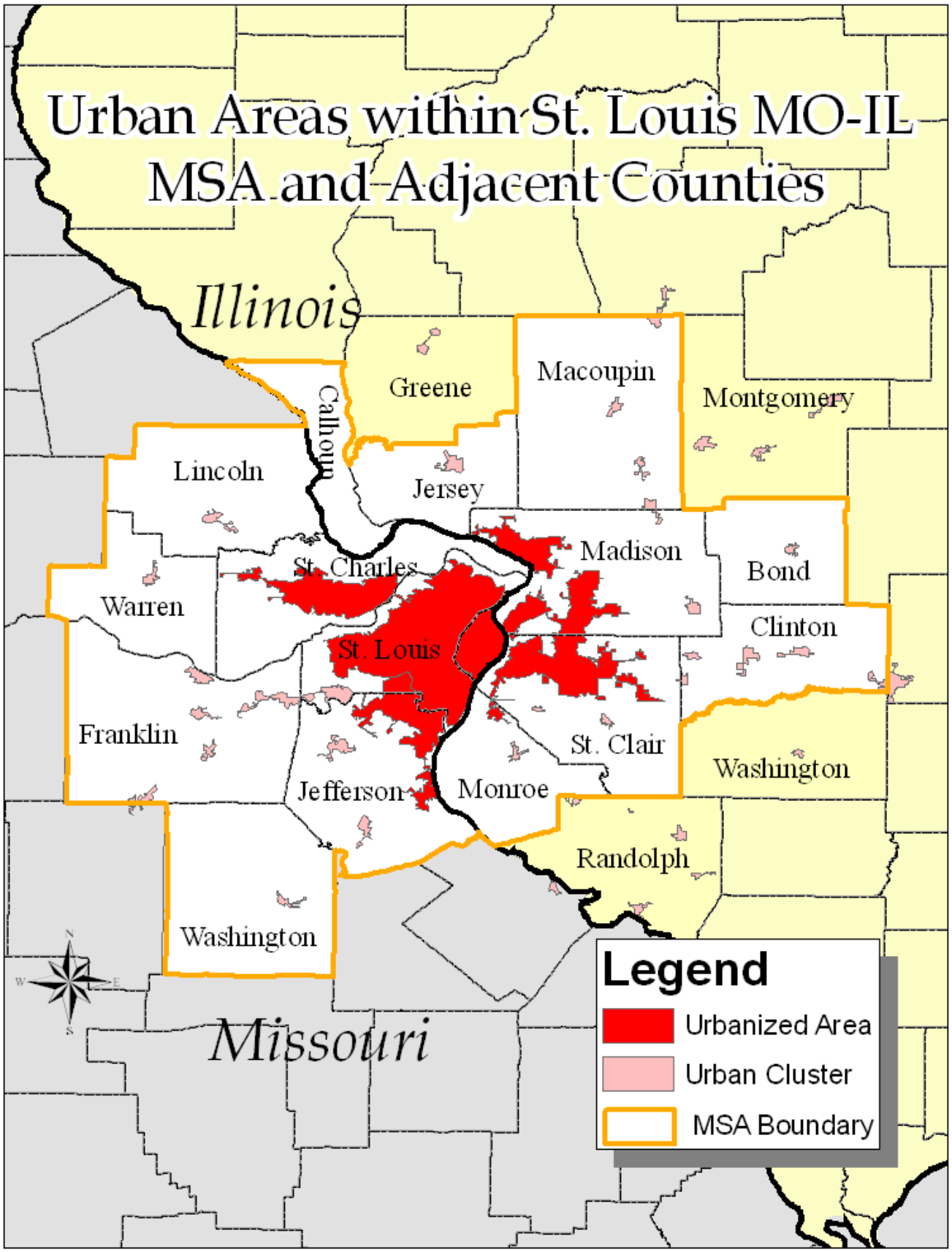


Figure 13

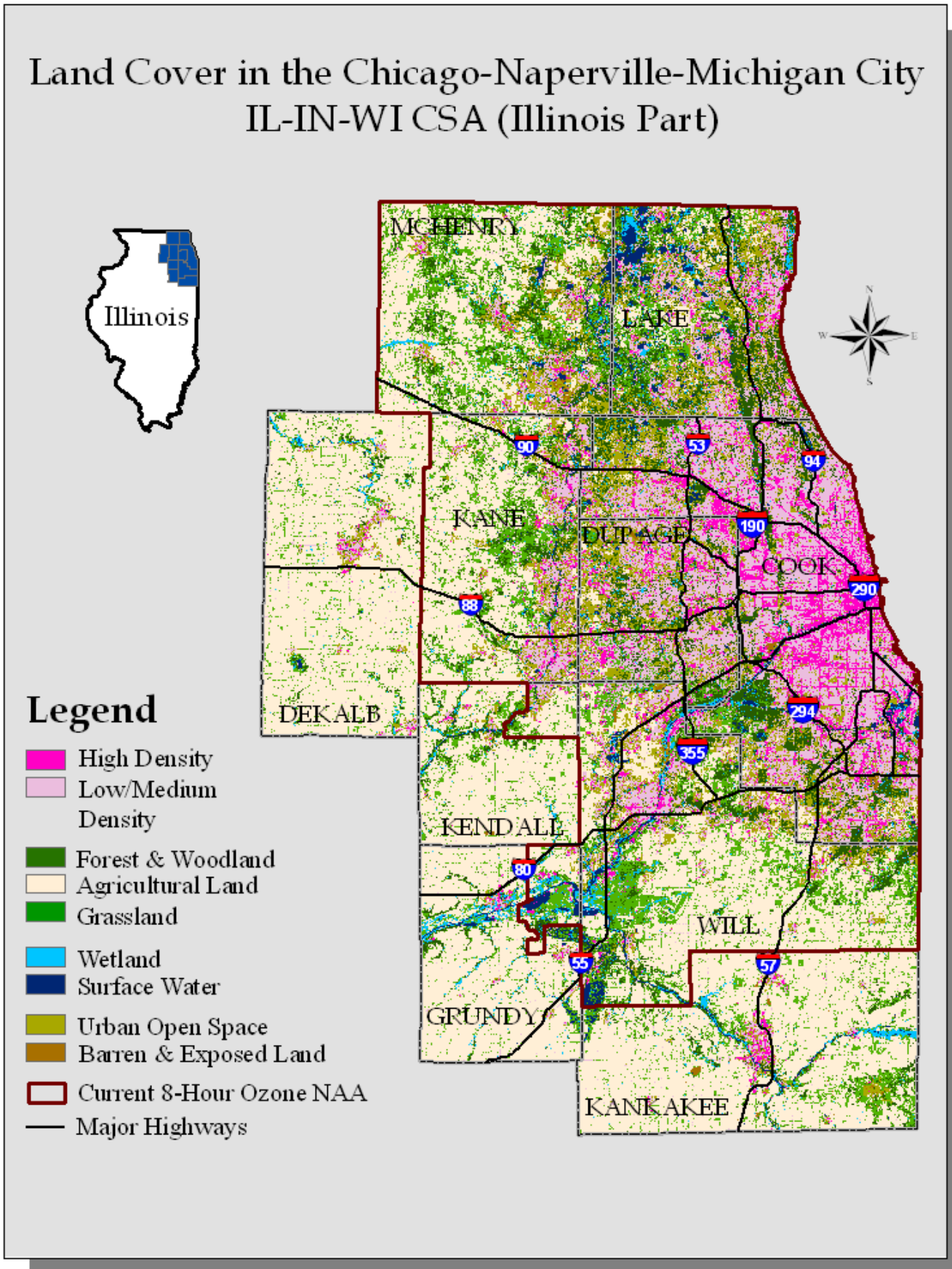


Figure 14

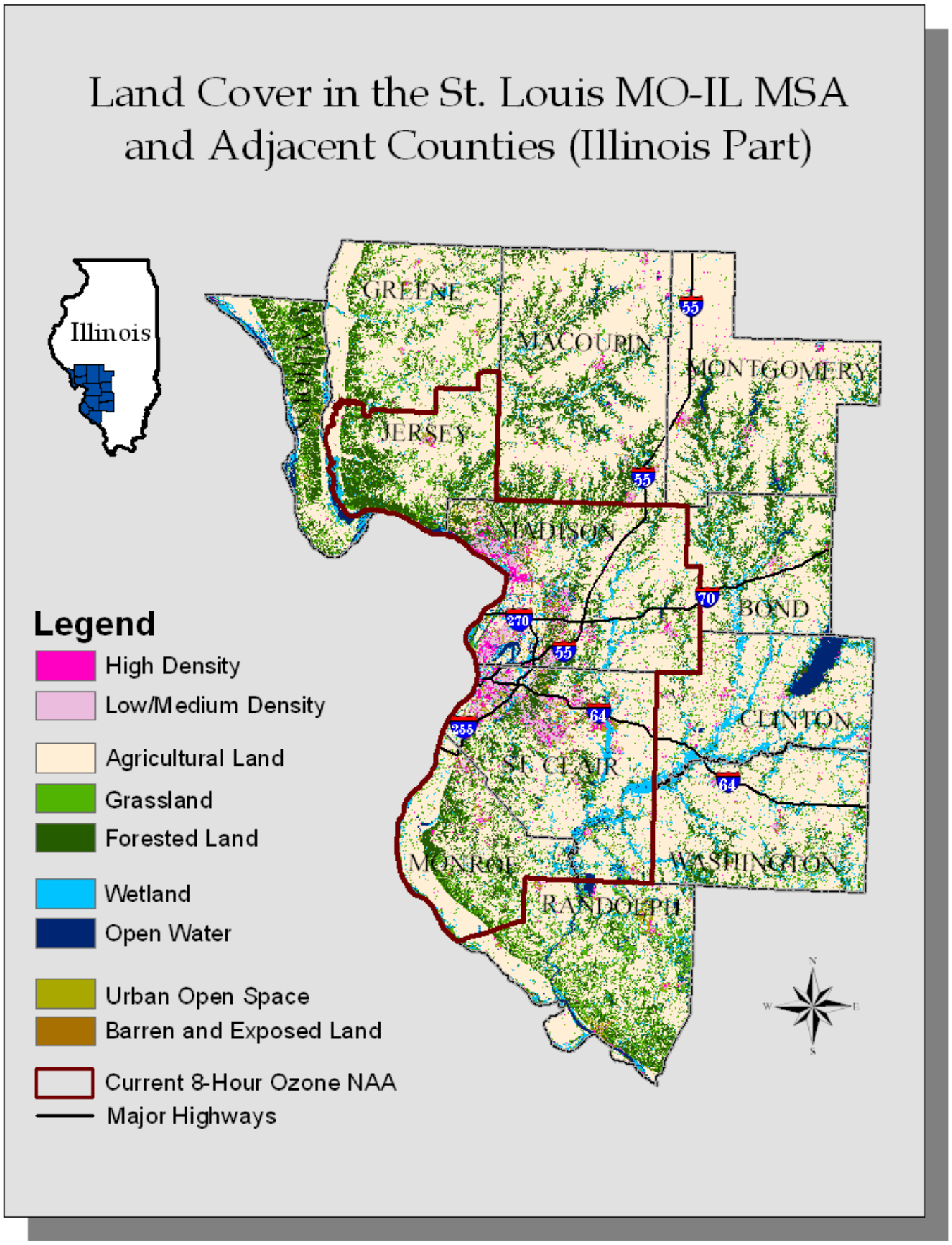
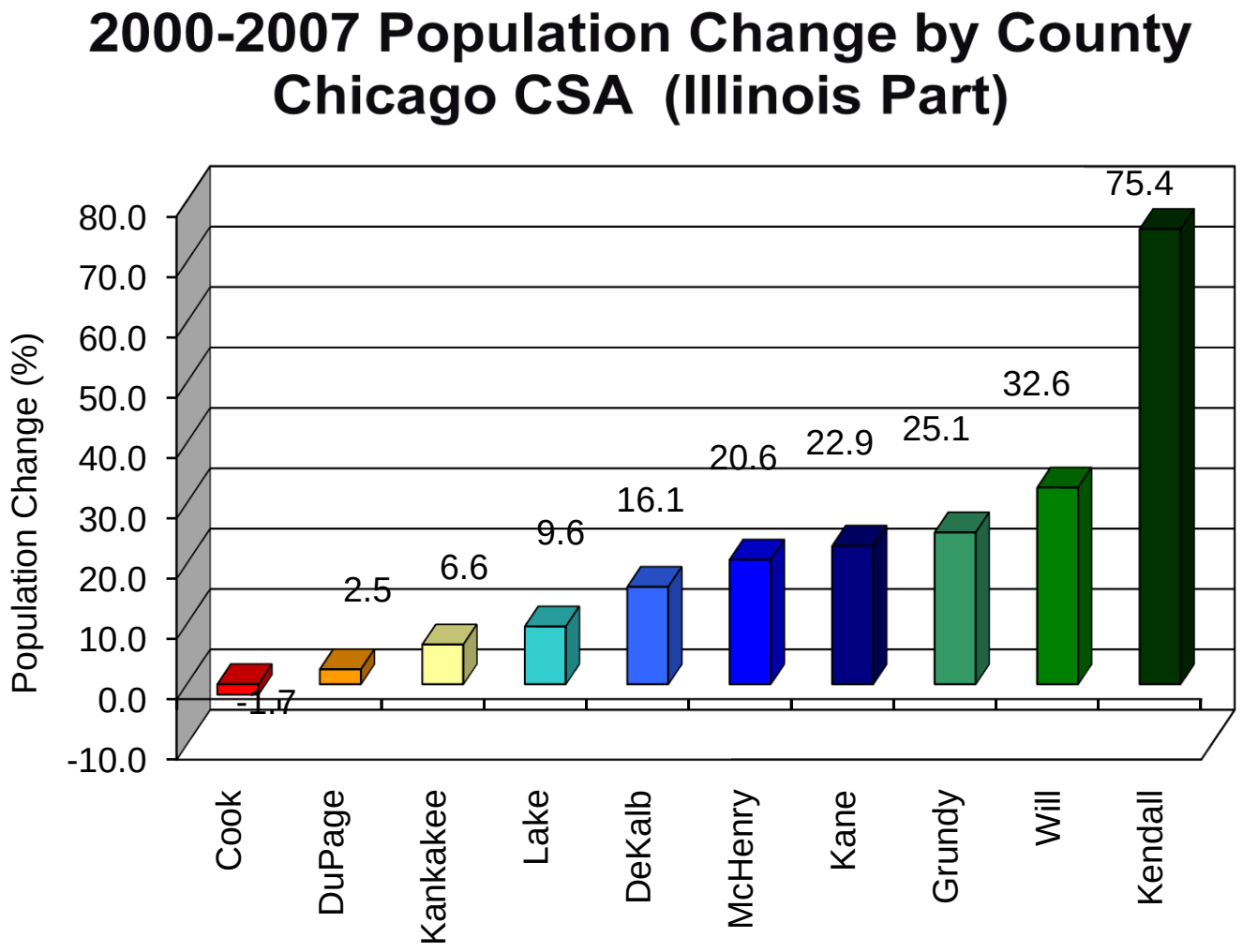
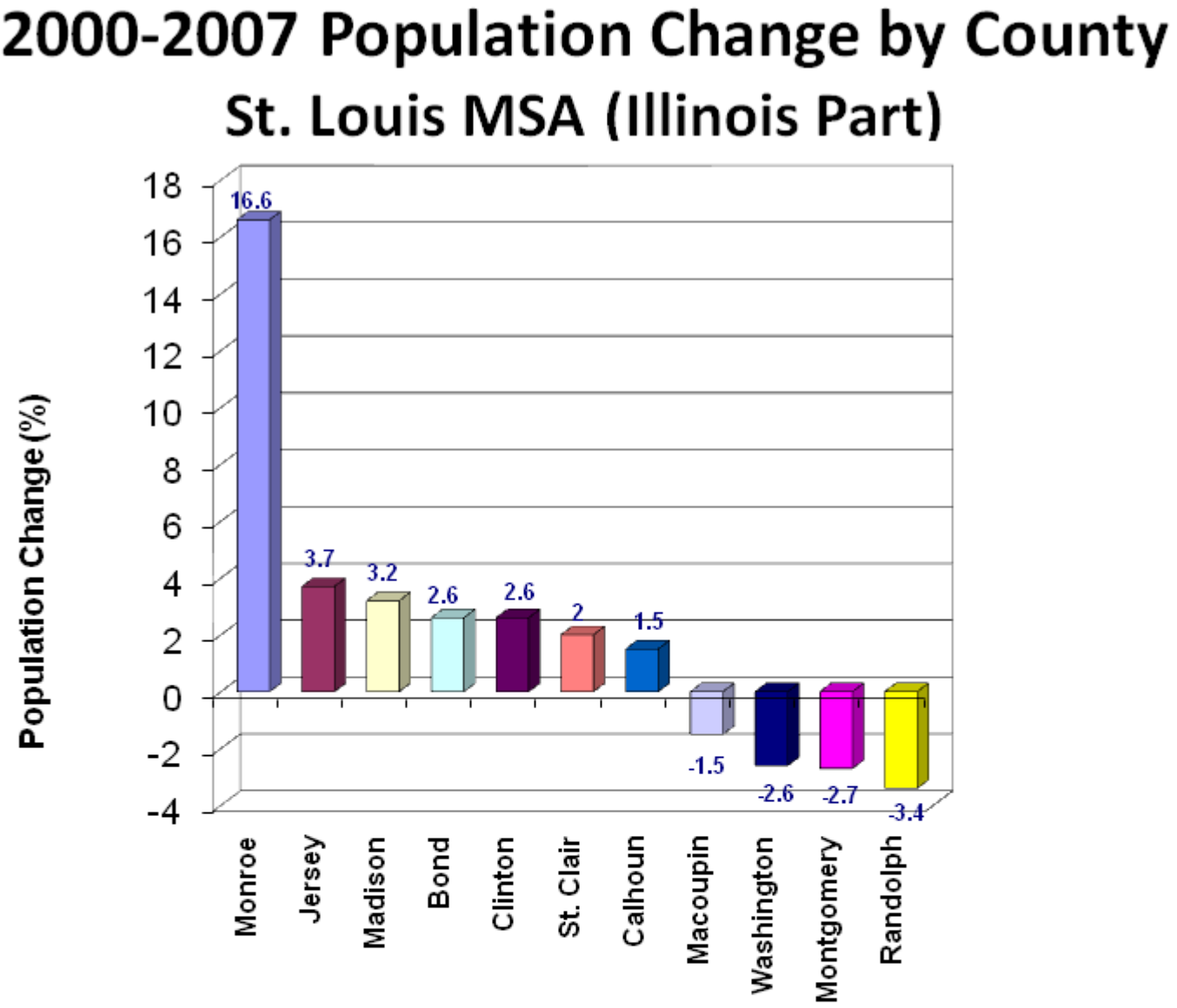


Figure 15



County	2000 Population	2007 Population
Kendall	55,207	96,818
Will	508,067	673,586
Grundy	37,674	47,144
Kane	407,584	501,021
McHenry	261,887	315,943
DeKalb	89,331	103,729
Lake	648,241	710,241
Kankakee	103,881	110,705
DuPage	906,760	929,192
Cook	5,377,927	5,285,107

Figure 16



County	2000 Population	2007 Population
Monroe	27,765	32,372
Jersey	21,654	22,455
Madison	259,112	267,347
Bond	17,649	18,103
Clinton	35,538	36,450
St. Clair	256,225	261,316
Calhoun	5,091	5,167
Macoupin	48,992	48,235
Washington*	15,166	14,769
Montgomery*	30,626	29,810
Randolph*	33,899	32,760

Figure 17

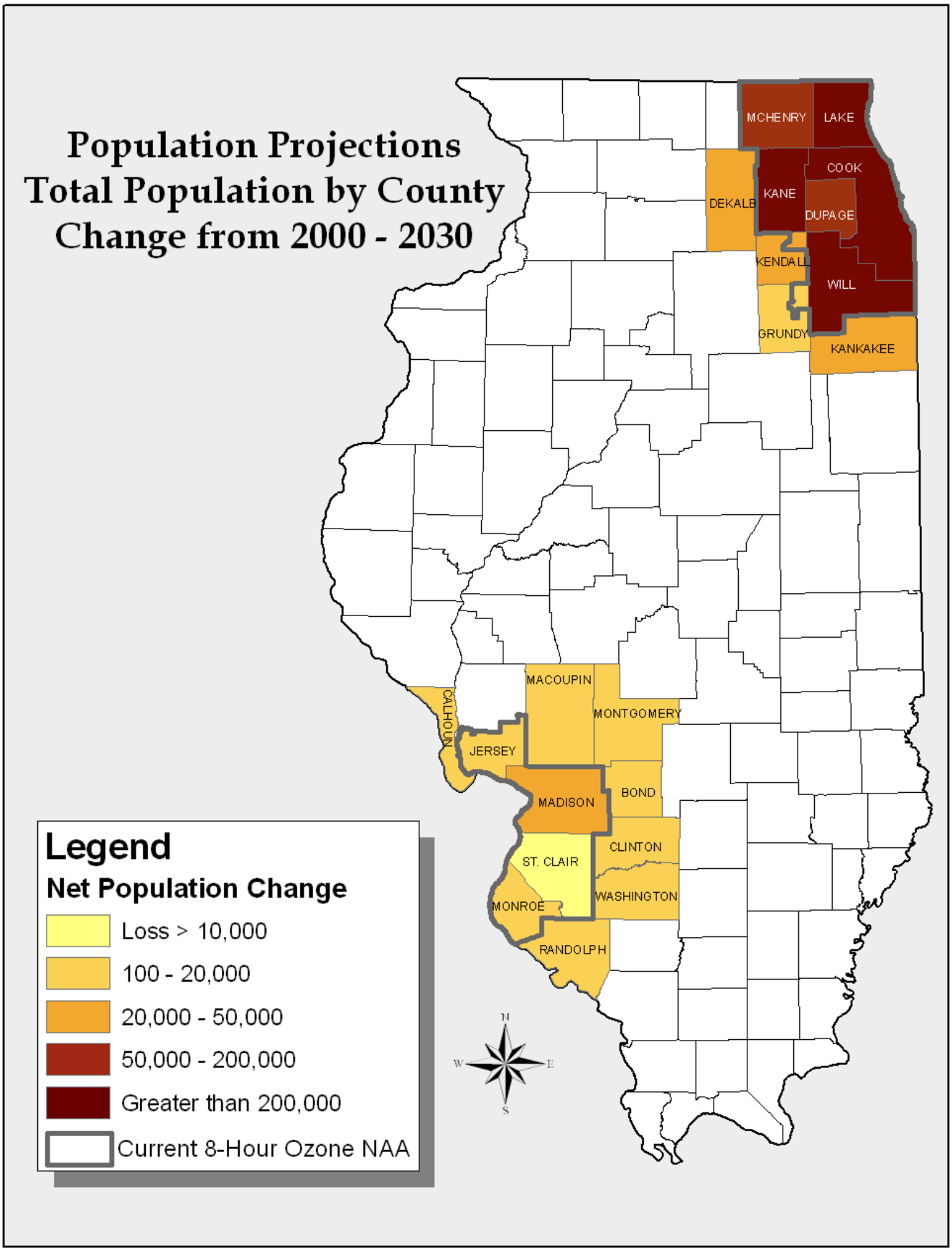


Figure 18

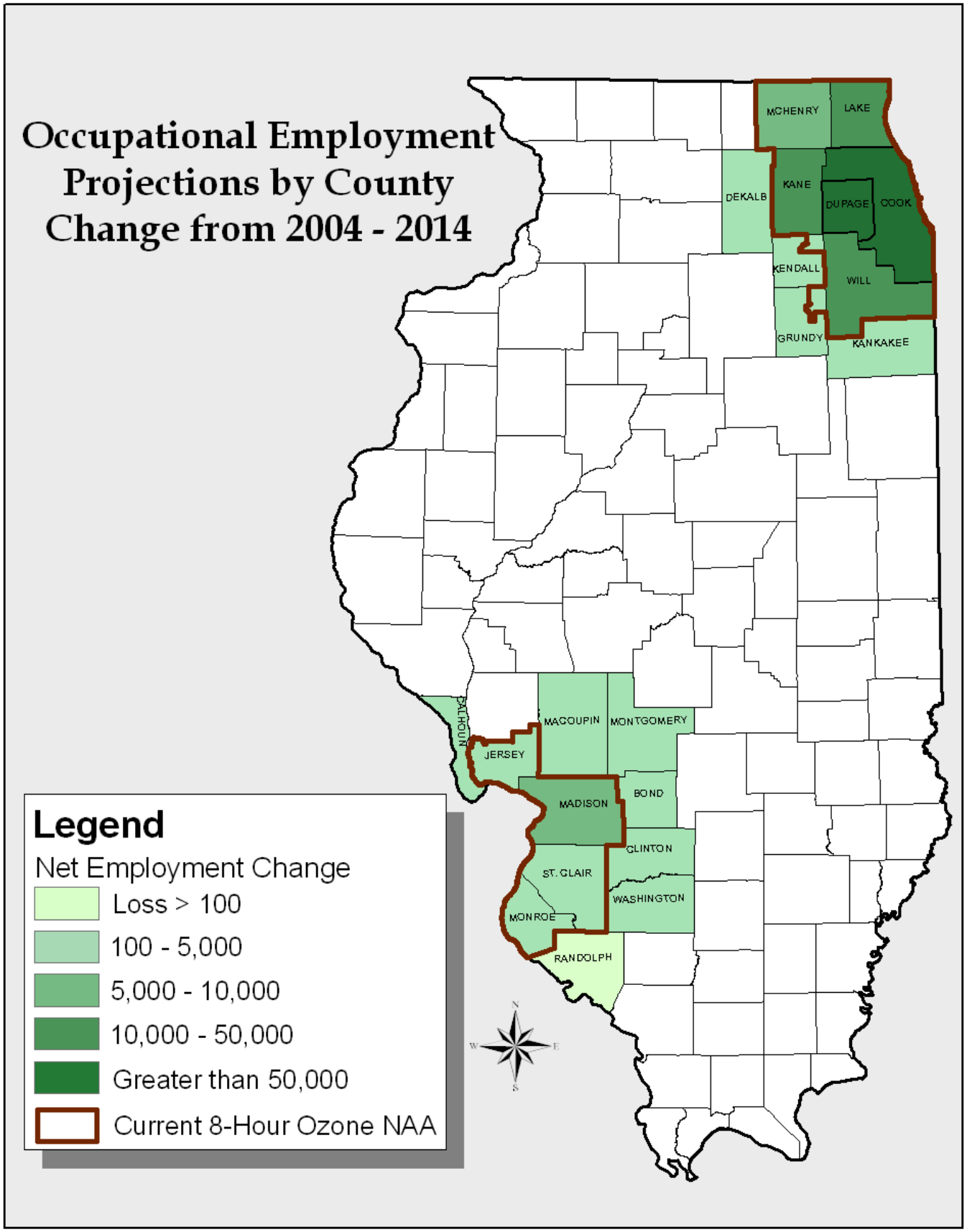


Figure 19

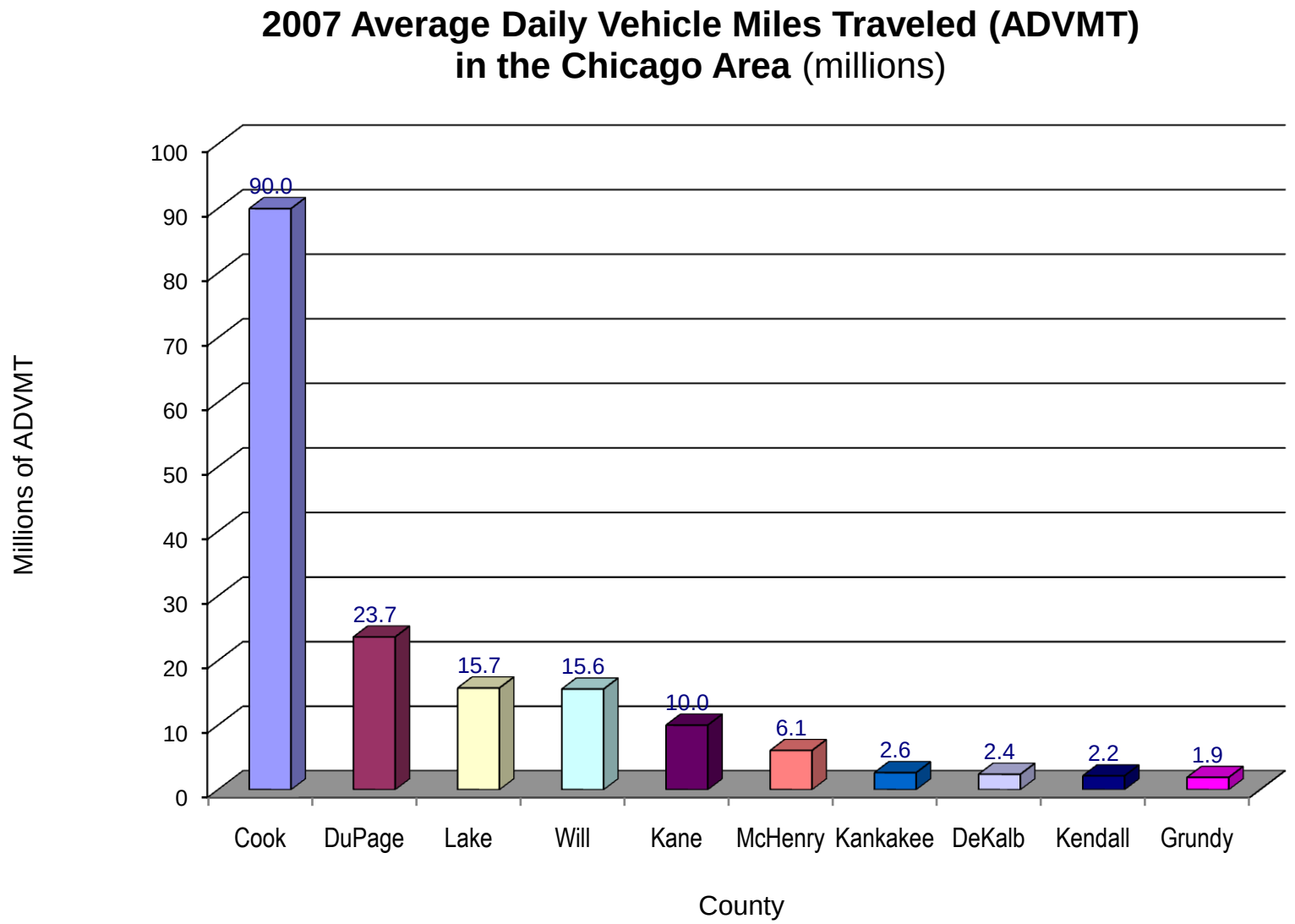


Figure 20

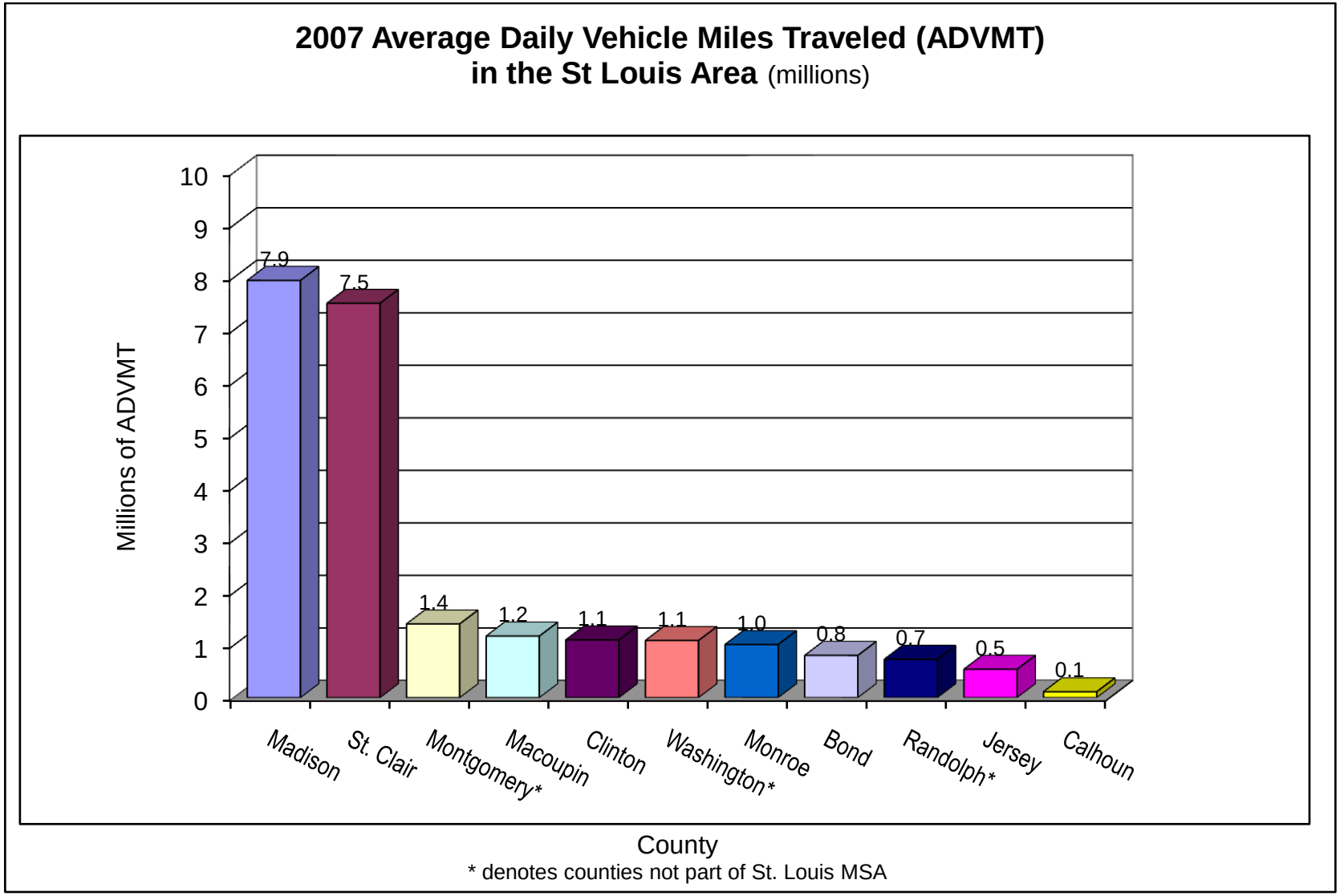


Figure 21

Average Daily VMT in the Chicago NAA, 1990 - 2007
IDOT Travel Statistics
Figures Show ADVMT to the nearest million
Chicago NAA + 3 Nonattainment Townships
in Grundy & Kendall Counties

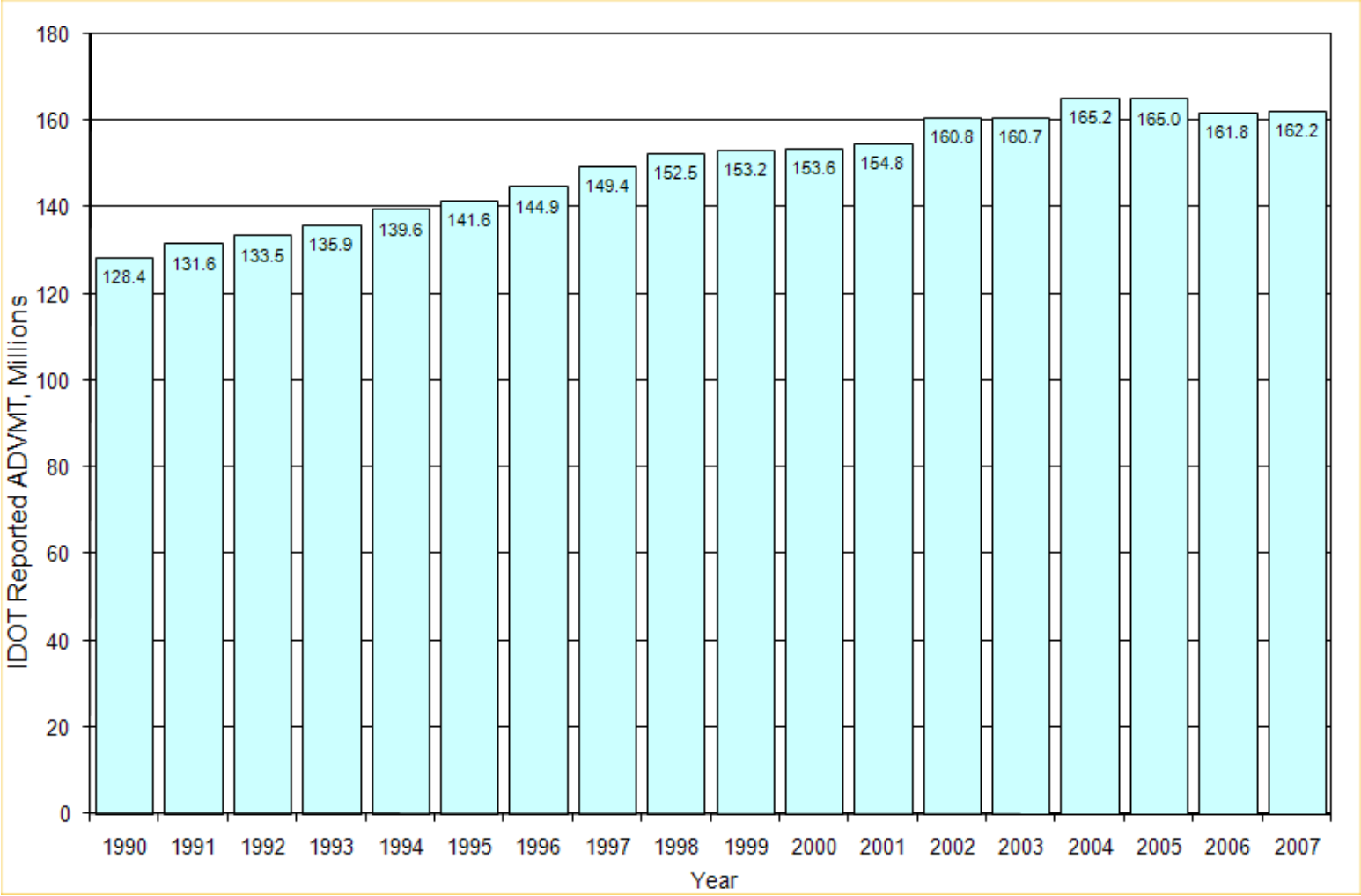


Figure 22

Average Daily VMT in the Metro-East NAA, 1990 - 2007
IDOT Travel Statistics
Figures Show ADVMT to the nearest million
Metro-East NAA (Madison, Monroe & St. Clair Counties)

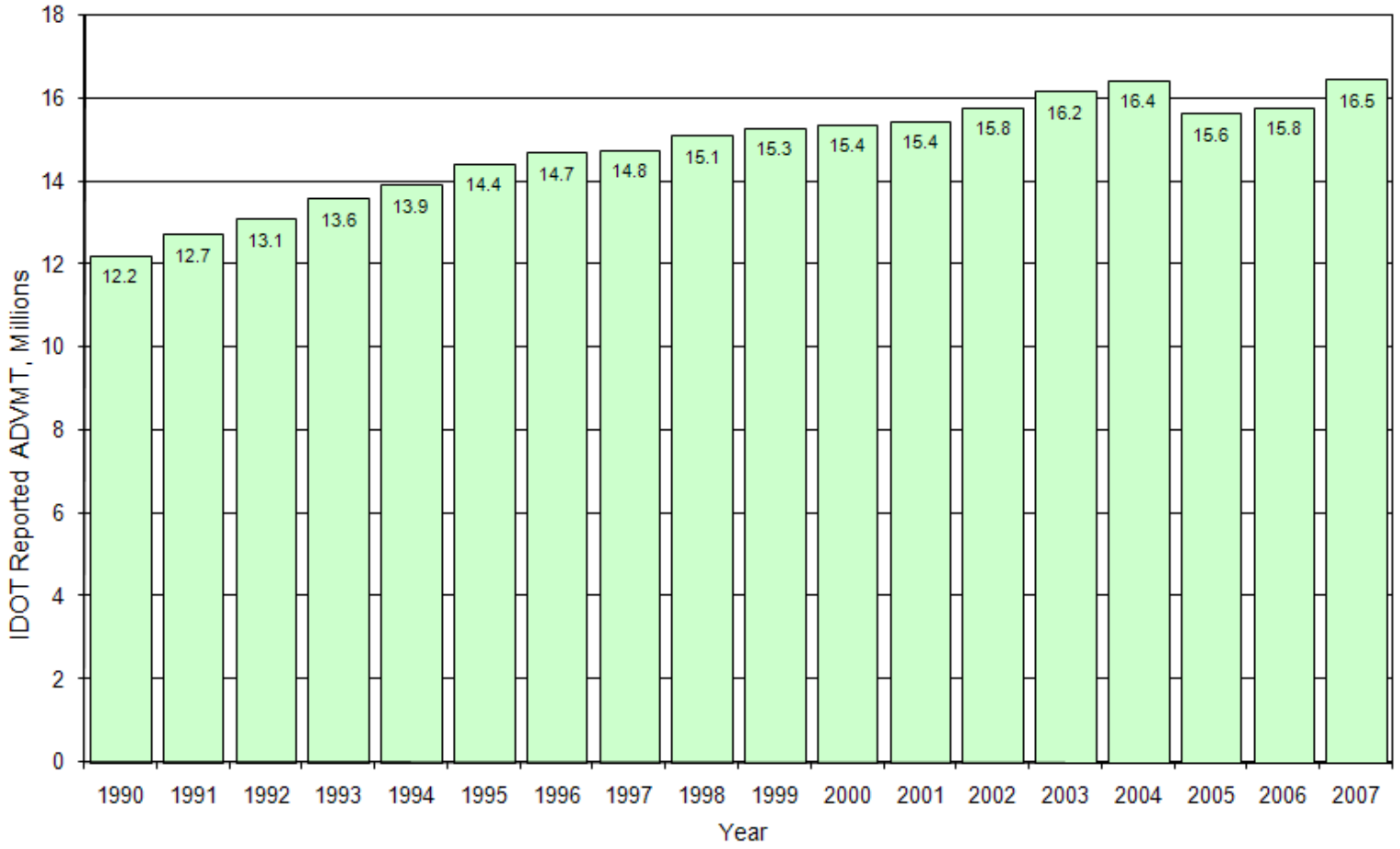
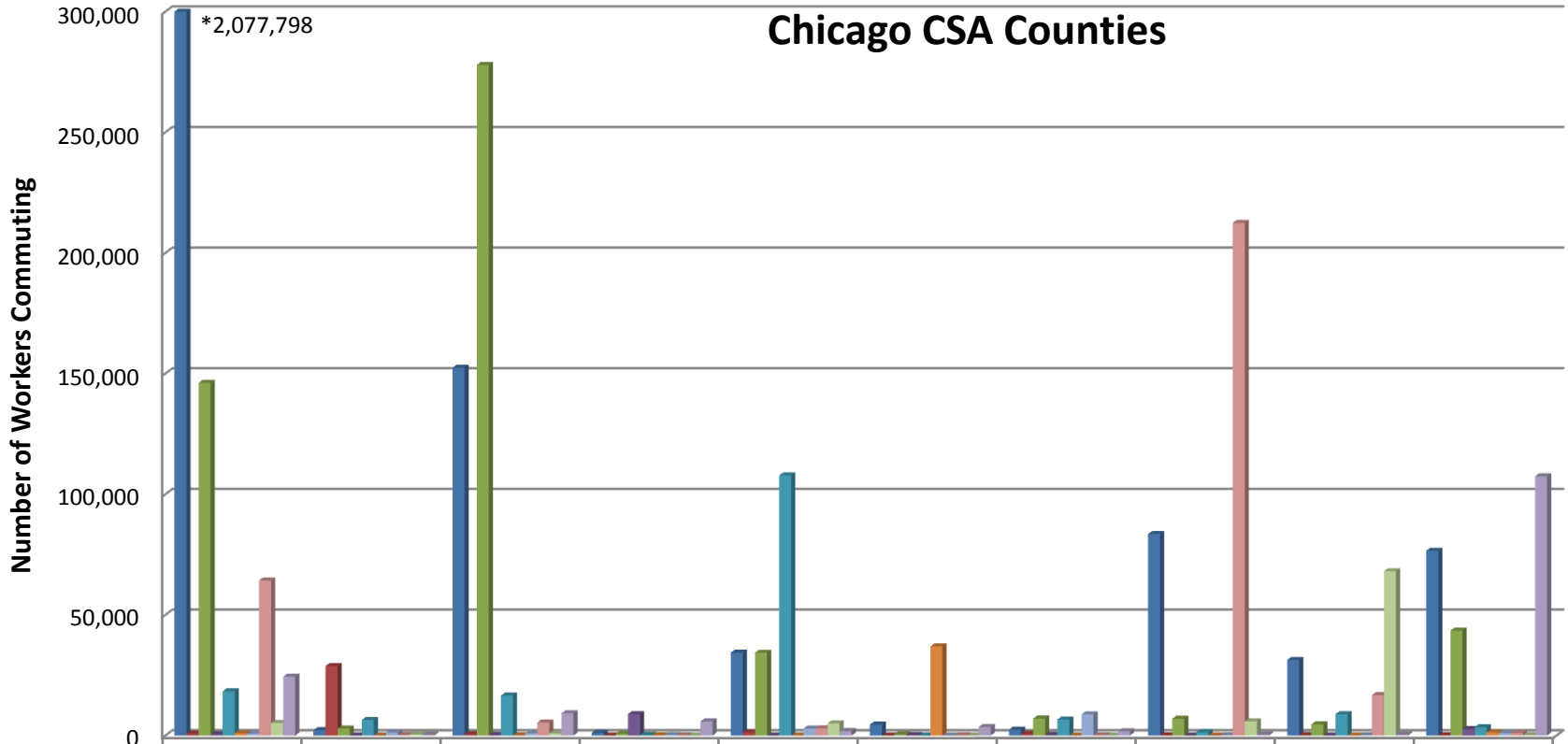
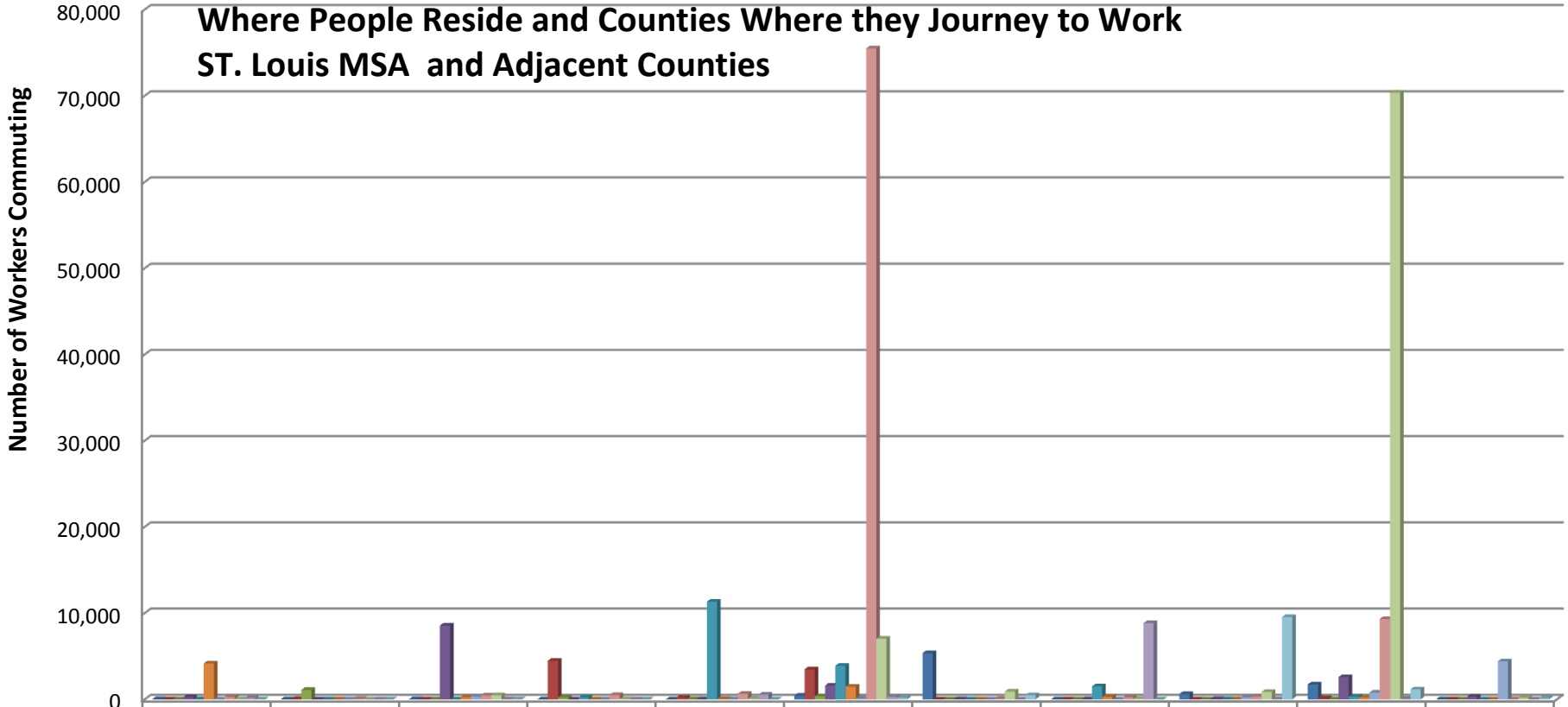


Figure 23



Resident County	*Cook	DeKalb	DuPage	Grundy	Kane	Kankakee	Kendall	Lake	McHenry	Will
Cook	2,077,798	2,221	152,433	1,123	34,361	4,559	2,459	83,502	31,337	76,574
DeKalb	826	28,811	560	7	1,311	0	725	60	202	149
DuPage	146,135	2,857	277,934	765	34,318	471	7,051	6,967	4,650	43,498
Grundy	533	19	260	8,884	51	202	299	24	47	2,702
Kane	18,345	6,468	16,539	296	107,807	30	6,630	1,383	8,877	3,432
Kankakee	977	0	95	98	36	36,936	8	8	0	1,352
Kendall	837	1,263	949	180	2,866	12	8,798	64	73	1,097
Lake	64,253	249	5,377	68	3,012	63	108	212,450	16,731	1,128
McHenry	5,182	448	884	23	5,056	4	20	5,866	68,108	158
Will	24,432	349	9,197	5,869	1,840	3,564	1,737	389	343	107,456

Figure 24



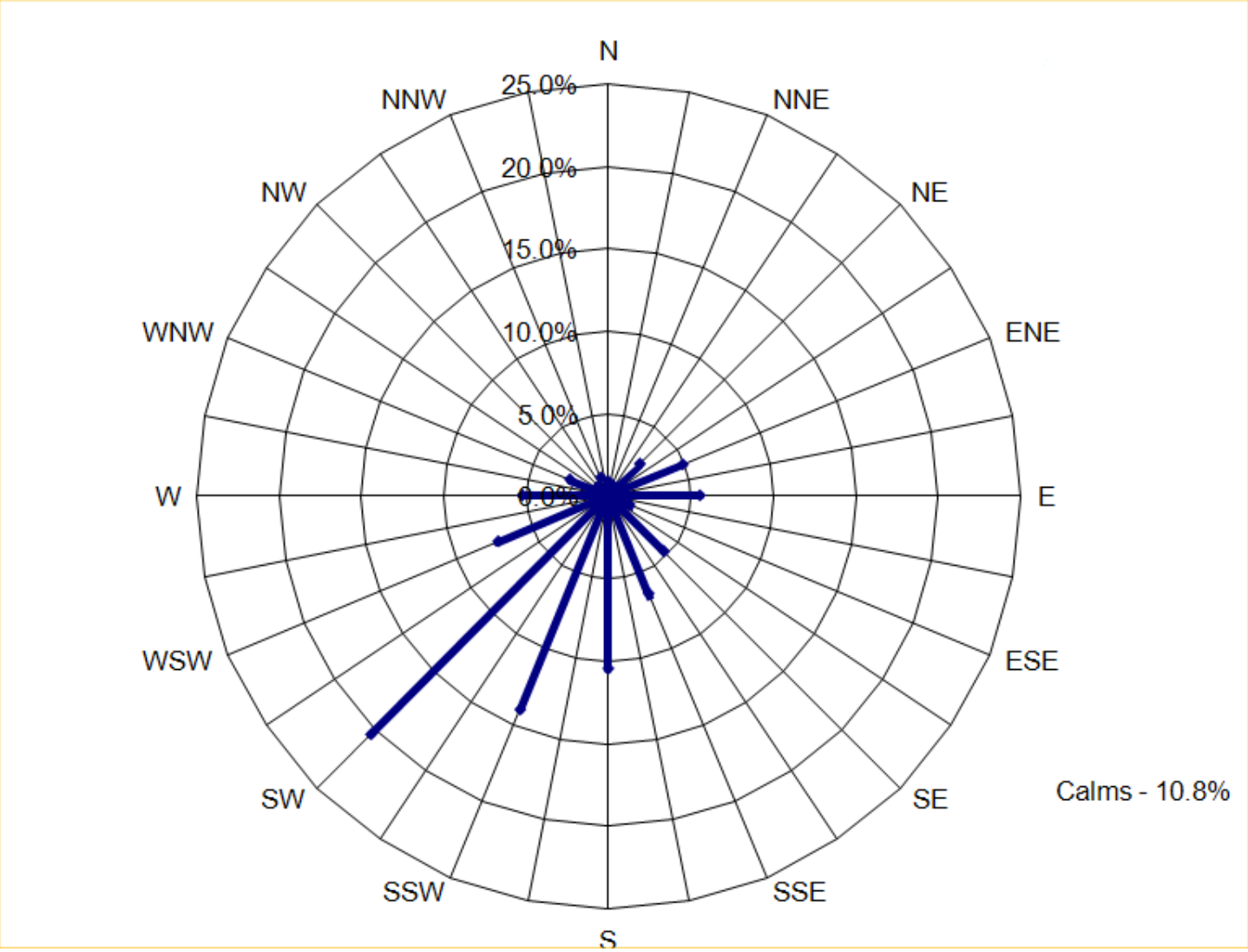
Resident County	Bond	Calhoun	Clinton	Jersey	Macoupin	Madison	Monroe	Montgomery	Randolph	St. Clair	Washington
Monroe	18	0	20	0	0	421	5,367	0	623	1,730	8
Jersey	7	38	0	4,473	204	3,480	0	7	6	111	0
Calhoun	0	1,099	0	208	12	362	0	5	2	13	0
Clinton	256	0	8,567	0	22	1,598	20	16	41	2,586	309
Macoupin	14	2	0	238	11,335	3,897	7	1,516	14	315	0
Bond	4,168	0	248	0	42	1,471	4	292	13	201	10
Washington	5	0	340	0	23	94	0	0	228	786	4,408
Madison	289	39	460	506	650	75,494	70	239	322	9,317	21
St. Clair	29	0	479	30	61	7,044	916	57	871	70,379	179
Montgomery	153	8	12	7	542	288	0	8,843	23	75	0
Randolph	6	0	30	0	0	181	485	4	9,545	1,162	144

Figure 25

Topography

Figure 26

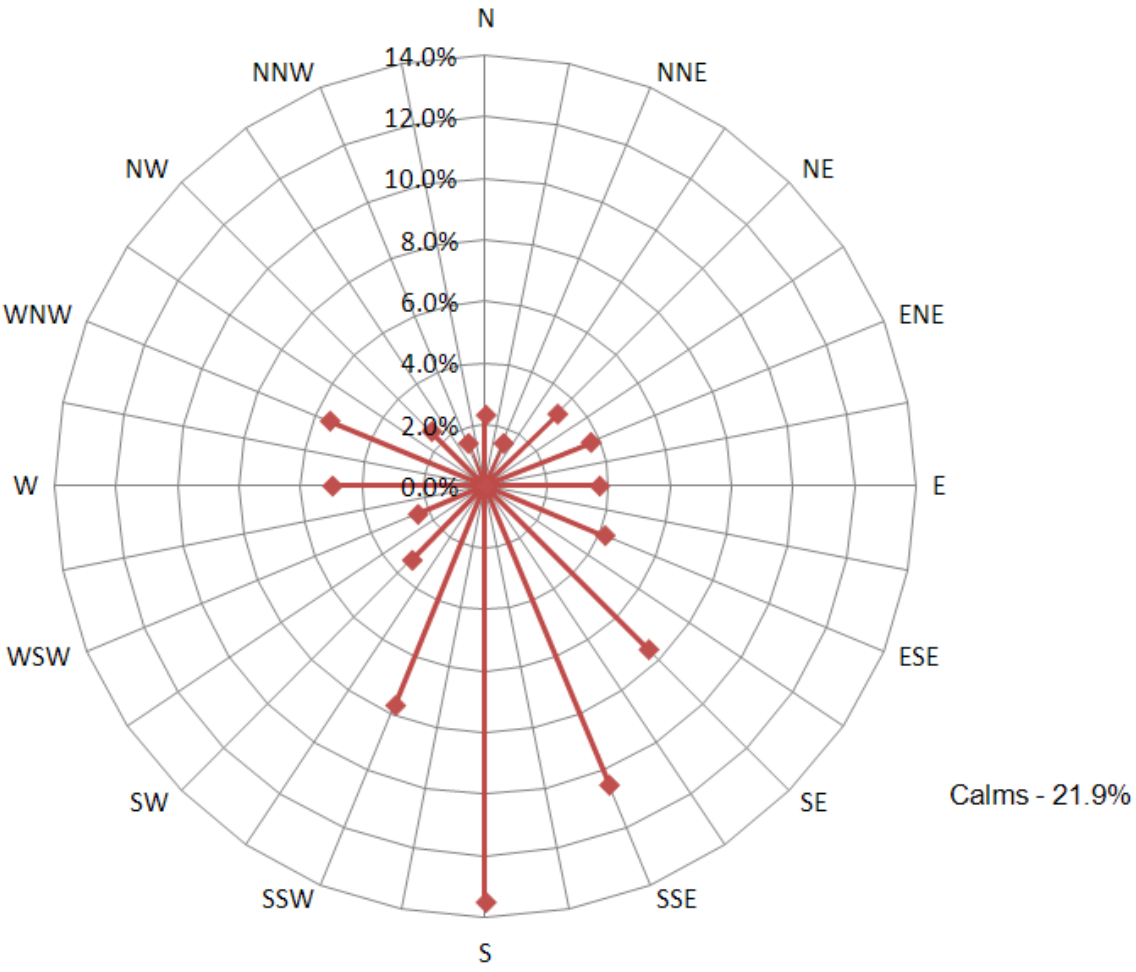
Chicago Area Pollution Rose
2006 – 2008
All sites
Days > 75ppb



Meteorology based on Alsip 2006-2008

Figure 27

Metro-East Pollution Rose (2006 – 2008)
All sites
Days > 75ppb



Meteorology based on Edwardsville 2006-2008

Figure 28

Proposed 8-Hour Ozone Nonattainment Areas