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U.S. EPA REGION 5
OFFICE OF REGIONAL ADMINISTRATOR

GEORGE H. RYAN
GOVERNOR

June 30, 2000

Ms. Carol M. Browner, Administrator
1101 A
U.S. Environmental Protection Agency Headquarters
Ariel Rios Building
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

Re: Designation of Attainment and Nonattainment Areas Under the 8-Hour Ozone Standard

Dear Ms. Browner:

The State of Illinois is somewhat reluctant to recommend attainment and nonattainment areas for the 8-hour ozone standard at this time given the litigation pending before the U.S. Supreme Court regarding the validity of the standard and the unknowns associated with requirements applicable by operation of law and their enforceability because of the pending litigation. Nevertheless, we in Illinois are committed to working cooperatively with the federal government in developing programs and policies in the best interests of our citizens and believe that our providing you with recommendations for attainment and nonattainment designations under the 8-hour ozone standard is preferable to your taking action without State input.

Therefore, consistent with the guidance you have provided and based upon air quality data from 1997 through 1999, the State of Illinois is recommending attainment and nonattainment designations for all areas of the State. The specific descriptions of these areas is provided in the enclosed technical materials.

If you have questions regarding our recommendations, please contact Dennis Lawler, Manager of the Division of Air Pollution Control at the Illinois Environmental Protection Agency at 217/785-4140.

Sincerely,

George H Ryan

GEORGE H. RYAN
Governor

Enclosures

cc: Robert Perciasepe, Assistant Administrator, Air and Radiation Division
Francis X. Lyons, Assistant Administrator, Region V

Recommended Attainment/Nonattainment Designations in Illinois For the 8-Hour Ozone 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	

June 7, 2000

Recommended Nonattainment Boundaries in Illinois for the 8-Hour Ozone National Ambient Air Quality Standard

INTRODUCTION

In July 1997, the U.S. Environmental Protection Agency (EPA) revised the National Ambient Air Quality Standard (NAAQS) for ozone by changing the level of the standard from 0.12 ppm to 0.08 ppm, and changing the 1-hour averaging time of the standard to an 8-hour averaging time. Following 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). Although the U.S. Court of Appeals for the D. C. Circuit remanded the 8-hour ozone standard in May 1999 and the U.S. Supreme Court has agreed to review the case, the Appellate Court affirmed EPA's authority to make designations. Illinois is, therefore, required to provide recommendations for attainment/nonattainment area boundaries for the 8-hour ozone standard. The 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 revised 8-hour ozone standard. The existing nonattainment areas in Illinois for the 1-hour ozone standard encompass the Chicago and Metro-East St. Louis metropolitan areas (see Figure 1). Based on an analysis of air quality, emissions, land use, and population trends, the IEPA recommends that the boundaries of the existing attainment/nonattainment areas, which were promulgated for the previous 1-hour standard, remain the same for the revised 8-hour standard.

FEDERAL GUIDANCE

On March 28, 2000, EPA published guidance for the States to consider in establishing the nonattainment designation boundaries for the 8-hour standard. In the guidance document, EPA recommends 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. Consistent with the requirements for 1-hour nonattainment areas, EPA's strong presumption favors nonattainment boundaries that reflect the Metropolitan Statistical Area (MSA) or the Consolidated Metropolitan Statistical Area (CMSA) as defined by the U.S. Census Bureau, for all proposed designations under the 8-hour NAAQS. A list of the counties in Illinois comprising the Chicago CMSA and the St. Louis MSA is included as Table 1. States may request that the boundaries of a nonattainment area be expanded beyond the MSA or CMSA to include additional counties when those counties contain sources, population, commuting patterns or other factors that may contribute to the nonattainment problem. States may also request smaller nonattainment areas where counties, or portions of

counties, are considered to be rural. In areas where the 1-hour NAAQS still applies, EPA suggests that the designated 8-hour nonattainment area boundaries be the same as or larger than the existing 1-hour nonattainment area boundaries.

ANALYSIS

As mentioned previously, EPA's guidance presumes that proposed nonattainment area designations for the 8-hour NAAQS reflect the CMSA or MSA to incorporate not only the areas of measured violations, but also the nearby emission source areas that contribute to it. Further, in areas where the 1-hour NAAQS still applies, EPA presumes that the proposed designations will at least match the existing designations. For these reasons, the existing 1-hour nonattainment area boundaries, which were originally based on the CMSA or MSA boundaries, were the IEPA's starting point for consideration of nonattainment area boundaries for the 8-hour NAAQS. The IEPA has considered current (1997-99) ozone air quality data, as well as other factors, including projected air quality considering planned emission reduction strategies such as included in or required by the NOx SIP Call, spatial patterns of precursor emissions near and upwind of the monitors not meeting the standard, and projected economic and population growth patterns as they relate to expected growth of precursor emissions. The following is a brief analysis of each of these factors.

Current Air Quality

EPA requires that 8-hour nonattainment designations be based on the design values (i.e., the average of the fourth high values from each of three consecutive years of data at each monitor) calculated from observations from the most recent 3-year period of record -- 1997-99. The design values derived from the ozone measurements collected by IEPA's ambient air monitoring network 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 are limited to the Chicago and Metro-East metropolitan areas and Jersey County. All of the rest of Illinois outside of these areas currently meet 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, which indicate that violations are somewhat limited in geographic extent. In the Chicago area, for example, measured design values from the 1997-99 period exceed the NAAQS at only 5 monitoring stations, four of which are in Cook County, and the other is in the Lake County. In the Metro-East area, design values exceeding the NAAQS have been measured only in Madison and Jersey Counties during this 3-year period. Ozone air quality data collected in Illinois, therefore, indicate that it is appropriate to retain, for purposes of the 8-hour NAAQS, the nonattainment designations currently in place for Chicago and Metro-East. The remaining portions of Illinois should retain their designation of attainment for the ozone standard. Jersey County should also retain its designation of attainment even though it currently experiences ozone air quality levels in excess of the 8-hour NAAQS. Jersey County is a rural area that is affected by transport from the St. Louis urbanized area, as well as other upwind source regions. Since, there are no sources in Jersey County that contribute to measured violations of the standard in this county or in St. Louis, Jersey County should not be designated as a nonattainment area. In the alternative, Jersey County should be designated unclassifiable for the 8-hour ozone standard. Should EPA

determine it is appropriate to designate Jersey County as a nonattainment area, then it is Illinois' recommendation that it be considered as a separate nonattainment area, apart from the Metro-East area.

Figures 3 and 4 depict ozone design values for 1997-99 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. Also, we note that the ozone design value for 1997-1999 in Beloit, Wisconsin, exceeds the 8-hour ozone standard. Beloit is in Rock County, Wisconsin, which borders Winnebago County in northern Illinois. While USEPA will likely discuss with the State of Wisconsin the appropriate designation for Rock County, Winnebago County is separate from the Beloit MSA and should be designated attainment, despite that it is upwind and contiguous with Rock County. The two counties have been placed in distinctly separate MSA's, and the ozone monitors in Winnebago County attain the 8-hour standard. Furthermore, the marginal 8-hour violation currently noted in Beloit will be resolved by regional control measures in the Midwest that are already planned.

Precursor Emissions

EPA recommends that proposed nonattainment designations for the 8-hour NAAQS reflect not only the areas of measured violations, but also the nearby areas that contribute to the measured violations. Figures 5 and 6 are maps which depict the spatial distributions of volatile organic compounds (VOC) and oxides of nitrogen (NOx) emissions for point, area and mobile sources, based on IEPA's 1996 emissions inventory. As shown in the figures, precursor emissions are generally highest in Cook, Will, DuPage, and Lake Counties in the Chicago metropolitan area, and in Madison and St. Clair Counties in the Metro-East area. Emissions densities in both areas are typically highest in the urban centers (i.e., downtown Chicago and downtown St. Louis), and decrease with distance from the downtown areas. From Table 3, the counties with the largest amounts of precursor emissions in the Chicago area are Cook, Will, DuPage, and Lake, while the counties contributing the fewest emissions are DeKalb, Grundy, Kendall, and Kankakee. In the Metro-East area, (see Table 4), Madison and St. Clair Counties clearly have the highest levels of precursor emissions while Monroe, Jersey, and Clinton Counties emit the lowest amounts.

Land Use, Population and Employment Trends

According to EPA, States may request that nonattainment areas be smaller than the entire CMSA or MSA where counties, or portions of counties, are considered to be rural. As mentioned previously, the IEPA's current emission estimates for DeKalb and Kankakee Counties, which were added to the Chicago CMSA in 1998, indicate that these counties have relatively small emissions and do not warrant inclusion in the Chicago nonattainment area for the 8-hour standard. Clinton County in the Metro-East area and Kendall and Grundy Counties near Chicago, were part of their respective CMSA or MSA since 1990, but were, for the most part, excluded from the previous 1-hour nonattainment area boundaries because of low emission levels and their predominantly rural character. [Note that certain townships in Kendall and Grundy Counties were included in the 1-hour NAA due to the presence of significant emission point sources in those townships.]

Table 5 lists the population of each of the counties contained in the Chicago CMSA and Metro-East St. Louis MSA, as well as land areas, and population densities based on U.S. Census Bureau estimates for 1998. Figures 7 and 8 graphically depict population densities in the Chicago CMSA and the Metro-East MSA, respectively. For the Chicago area, these data show that Cook, DuPage, Lake and Will Counties have both the highest population and population densities, while Grundy, DeKalb, Kendall, and Kankakee Counties have the lowest. St. Clair and Madison Counties contain the majority of the total Metro-East population, while Jersey, Monroe, and Clinton Counties are considerably less densely populated.

Figures 9 and 10 depict current land cover for both the Chicago and Metro-East areas based on data compiled by the Illinois Department of Natural Resources. In the Chicago area, the most urbanized counties are clearly Cook and DuPage Counties, although Lake, Will and Kane Counties also contain significant urbanized areas. Madison and St. Clair Counties are the most urbanized of the counties in the Metro-East area. In each of the Illinois counties of DeKalb, Kankakee, Kendall, Grundy, Jersey, and Clinton, the predominant land cover is agricultural and cropland, and in each county the amount of urban and built-up land is small (less than 5%). The dominance of agricultural land use types, coupled with the low population densities in these counties, confirm that they are primarily rural in nature.

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 Community Affairs (DCCA), and the Northeastern Illinois Planning Commission (NIPC) were referenced for this analysis. Population projections made by these agencies are included in Figures 11 and 11a. These projections indicate that the highest population growth rates are expected in the counties already included within the boundaries of the existing 1-hour ozone nonattainment areas. In the Chicago area, the highest population growth rates are projected to occur in Will County, followed by McHenry, Kane, and Kendall Counties. Conversely, the lowest growth rates are projected for Cook County. Population growth rates for the rural Counties of DeKalb and Kankakee, which are not currently included within the Chicago NAA, are relatively low. In the Metro-East area, population growth rates are highest in Monroe County, which is already included within the boundaries of the existing 1-hour NAA, and lowest in Madison and Clinton Counties. Madison County is already part of the Metro-East NAA, while Clinton County is not.

Employment growth projections are shown in Figure 12 and 12a. The figures indicate that employment growth is expected to occur largely in areas that are already included within the boundaries of the existing 1-hour NAA's. In the Chicago area, the highest rate of employment growth is expected to occur in DuPage County, while the lowest rates of employment growth are expected in DeKalb and Grundy Counties. In the Metro-East area, moderate employment growth is forecast for all of the Illinois counties currently included in the NAA (Madison, Monroe, and St. Clair Counties), and relatively low employment growth is expected in Clinton County.

Projected Air Quality

The Lake Michigan Air Directors Consortium (LADCO) and the IEPA performed an assessment of the effects of regional NOx emission controls required by EPA's rulemaking to reduce ozone transport. This rulemaking, which is referred to as the NOx SIP Call (63 Fed. Reg. 57355 (October

27, 1998)), requires 23 jurisdictions[1], including Illinois, to reduce NOx emissions to mitigate the transport of ozone and ozone precursors in the eastern U.S. The effects of these regional NOx emission reductions were evaluated using a mathematical, photochemical grid model, called the Urban Airshed Model (UAM, Version V), the same model used by the Ozone Transport Assessment Group (OTAG) and the EPA for evaluating and recommending NOx reduction strategies for the eastern U.S.

The results of this modeling are summarized in Figures 13 and 14. The results indicate that the NOx SIP Call controls will significantly improve ozone air quality throughout Illinois. Compared to current, observed air quality (see Figures 3 and 4), 8-hour ozone design values in both the Lake Michigan and St. Louis areas are projected to improve substantially by 2007 in response to anticipated emission reductions required by the CAA and the NOx SIP Call. The modeling shows that these control measures may be sufficient to demonstrate attainment of the 8-hour standard at all locations in Illinois, but not in adjoining states in the Lake Michigan and St. Louis regions. It is noteworthy that Jersey County, north of St. Louis is expected to attain the 8-hour ozone standard without additional control measures beyond those already required by the CAA and the NOx SIP Call. Illinois may need to seek some limited additional emission reductions to help bring downwind areas in adjoining states into attainment for the 8-hour standard, but expanding the geographic scope of the nonattainment area should not be required.

Summary

Tables 6 and 7 summarize, in tabular form, the results of the IEPA's evaluation of air quality, emissions, and demographic factors used to make the recommendations contained in the following section. The counties have been numerically ranked, in descending order, for each of the emissions and demographic factors considered in this analysis. The "total" presented for each county is merely the sum of the numeric ranking assigned for each factor. Based on each county's total, the overall ranking of the counties, in terms of their potential contribution to current or future NAAQS violations, are as follows:

Chicago CMSA		Metro-East St. Louis MSA
1. DuPage	6. McHenry	1. St. Clair
2. Cook	7. Kankakee	2. Madison
3. Lake	8. Kendall	3. Monroe
4. Will	9. DeKalb	4. Clinton
5. Kane	10. Grundy	5. Jersey

RECOMMENDATIONS

The CAA does not specify boundaries, size, or the extent to which source contributions require designation to nonattainment for the 8-hour standard nor has USEPA promulgated rules prescribing such. The IEPA's recommendations are generally consistent with the guidance provided by EPA (March 2000), and are based on an evaluation of present and projected air quality, the distribution of

[1] Note that the Appellate Court for the D.C. Circuit has since found that the NOx SIP Call should apply to only 22 jurisdictions (Michigan vs. EPA, No. 98-1497 (March 3, 2000)).

precursor emissions, and other demographic factors. The IEPA recognizes that each of the factors considered in this evaluation are not necessarily conclusive when viewed individually. Rather, the following recommendations are based on consideration of all of the data and projections taken together.

The IEPA's recommendation for attainment/nonattainment designations in Illinois for the 8-hour ozone ambient air quality standards is contained in Table 8. 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 and in Jersey County. 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.

Chicago Nonattainment Area

Cook County. Cook County is one of two counties in northeastern Illinois where current air quality data (1997-99) does not meet the 8-hour ozone standard. Cook County is currently designated nonattainment for the 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 10 counties in the CMSA. 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 CMSA. Cook County should be included in the Chicago nonattainment area for the 8-hour standard.

Lake County. Air quality data from the most recent 3-year period (1997-99) indicate that Lake County exceeds the 8-hour ozone standard. Lake County is currently designated nonattainment for the 1-hour ozone standard. Lake County has relatively high levels of both VOC and NOx emissions, relatively high total population and population density, and large amounts of acreage with urban land cover. The IEPA, therefore, recommends that Lake County be included in the Chicago nonattainment area for the 8-hour standard.

DuPage and Will Counties. Both DuPage and Will Counties are currently designated nonattainment for the 1-hour ozone standard. DuPage and Will Counties have higher levels of precursor emissions than any of the counties in the Chicago CMSA except Cook County. DuPage County is second only to Cook County in total population, population density, and total urban land cover. DuPage County is also experiencing the highest level of employment growth of any of the counties in the CMSA. Similarly, Will County has a relatively high population, as well as population density, and urban land coverage. Will County is projected to have the highest population growth rate of any of the counties in the CMSA. 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 currently experiencing high levels of population and employment growth, especially in the rural portions of the counties. Both McHenry and Kane Counties are currently designated nonattainment for the 1-hour ozone standard. The IEPA, therefore, recommends that McHenry and Kane Counties be included in the Chicago nonattainment area for the 8-hour ozone standard.

Grundy and Kendall Counties. Due to their primarily rural character, most of Grundy and Kendall Counties were not included in the 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 1-hour nonattainment area due to the significance of stationary, or point source, VOC emissions as indicated by the IEPA's 1990 emissions inventory. Precursor emission levels in the remaining portions of these counties are relatively low. Further, Oswego Township is included in the Chicago contiguous urbanized area, as defined by the U.S. Census Bureau. 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 maintain their current classification of attainment.

DeKalb and Kankakee Counties. DeKalb and Kankakee Counties were added to the list of CMSA counties by the U.S. Census Bureau in 1998 and are not included in the Chicago nonattainment area for the 1-hour ozone standard. These counties are primarily rural, as shown by their low 1998 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 CMSA. 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.

Metro-East - St. Louis Nonattainment Area

Madison County. Current air quality data (1997-99) indicate that Madison County does not meet the 8-hour ozone standard. All four monitoring stations operated by the IEPA in Madison County currently exceed the 8-hour standard. Madison County is currently designated nonattainment for the 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, and the largest acreage of urban land cover of all the counties in the Metro-East. Madison County should be included in the Metro-East nonattainment area for the 8-hour standard.

St. Clair County. Air quality data from the most recent 3-year period (1997-99) indicate that St. Clair County meets the 8-hour ozone standard, although this county is currently designated nonattainment for the 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 large amounts of acreage with urban land cover. St. Clair County is also expected to experience relatively high population and employment growth in future years, based on local planning agency projections. The IEPA, therefore, recommends that St. Clair County be included in the 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 nonattainment for the 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. Monroe County is experiencing relatively high levels of population growth, however, especially the northern portions of the county that are contiguous to the Metro-East urbanized area (as defined by the U.S. Census Bureau – see Figure 15). The IEPA, therefore, recommends that Monroe County be included in the Metro-East nonattainment area for the 8-hour ozone standard.

Clinton County. As mentioned previously, the current (1998) MSA boundaries established by the U.S. Census Bureau for St. Louis include Clinton County, Illinois, that is not contained within the existing 1-hour ozone nonattainment area. Clinton County is primarily rural, with low 1998 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.

Jersey County. The IEPA recommends that Jersey County, which is a rural county located downwind of St. Louis, be designated as an attainment area, or, with alternative, unclassifiable, even though current air quality levels exceed the 8-hour NAAQS. Jersey County is currently designated attainment for the 1-hour ozone standard. This county has low levels of precursor emissions, low population and population density, low urban land cover, and low population and employment growth rates. The character of Jersey County is distinctly different from the St. Louis metropolitan area and would clearly attain the 8-hour ozone NAAQS but for the impacts from transport from St. Louis. Modeling conducted by LADCO and the IEPA indicate that anticipated control measures contained in the CAA and the NOx SIP Call are sufficient to show attainment in Jersey County in the near future. Implementing new regulatory initiatives in Jersey County will do little to improve air quality in the county or in nearby St. Louis. Jersey County, therefore, should be designated as an attainment area or, in the alternative, unclassifiable for the 8-hour ozone standard. However, in the event that EPA should decide that Jersey County should be designated nonattainment, then it should be a separate nonattainment area, apart from the Metro-East area.

Remainder of Illinois

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 1
COUNTIES INCLUDED IN THE CHICAGO CMSA AND ST. LOUIS MSA IN 1990 AND 1998*

1990	1998
Chicago-Gary-Kenosha, IL-IN-WI CMSA	**Chicago-Gary-Kenosha, IL-IN-WI CMSA**
Cook County, IL	Cook County, IL
DuPage County, IL	*DeKalb County, IL*
Grundy County, IL	DuPage County, IL
Kane County, IL	Grundy County, IL
Kendall County, IL	Kane County, IL
Lake County, IL	*Kankakee County, IL*
McHenry County, IL	Kendall County, IL
Will County, IL	Lake County, IL
Lake County, IN	McHenry County, IL
Porter County, IN	Will County, IL
Kenosha County, WI	Lake County, IN
	Porter County, IN
	Kenosha County, WI
St. Louis, MO-IL MSA	**St. Louis, MO-IL MSA**
Clinton County, IL	Clinton County, IL
Jersey County, IL	Jersey County, IL
Madison County, IL	Madison County, IL
Monroe County, IL	Monroe County, IL
St. Clair County, IL	St. Clair County, IL
Crawford County, MO	Crawford County, MO
Franklin County, MO	Franklin County, MO
Jefferson County, MO	Jefferson County, MO
St. Charles County, MO	*Lincoln County, MO*
St. Louis County, MO	St. Charles County, MO
St. Louis City, MO	St. Louis County, MO
	Warren County, MO
	St. Louis City, MO

*Metropolitan areas defined by Office of Management and Budget - Source: U.S. Census Bureau
(Counties listed in italics reflect new counties added to the CMSA or MSA in 1998.)

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Table 2
1997-1999
8-Hour Ozone Design Values in Illinois

AQCR	County	Site	Address	4th High 8-Hour Values 97	98	99	97 – 99 8-hr Average
		Chicago Metropolitan Area					
67	Cook	Alsip	4500 W 123rd St	82	78	80	80.0
67	Cook	Calumet City	1703 State	75	69	79	74.3
67	Cook	Chicago-CTA	320 S. Franklin	76	69	82	75.7
67	Cook	Chicago-Jardine	1000 E. Ohio	91	79	85	85.0
67	Cook	Chicago-SE Police	103rd & Luella	77	69	75	73.7
67	Cook	Chicago-SWFP	3300 E. Cheltenham	87	80	97	88.0
67	Cook	Chicago-Taft	6545 W. Hurlburt	74	65	80	73.0
67	Cook	Chicago-Truman	1145 W. Wilson	—	77	90	83.5
67	Cook	Chicago-University	5720 S. Ellis	83	70	88	80.3
67	Cook	Cicero	1830 S. 51st Ave	74	71	79	74.7
67	Cook	Des Plaines	1375 5th St.	77	78	84	79.7
67	Cook	Evanston	531 Lincoln	94	86	91	[illegible]
67	Cook	Lemont	729 Houston	75	70	84	76.3
67	Cook	Northbrook	750 Dundee Rd	87	84	88	86.3
67	DuPage	Lisle	Morton Arboretum	72	68	75	71.7
67	Kane	Elgin	665 Dundee	76	74	81	77.0
67	Lake	Deerfield	1321 Wilmot Rd	84	77	84	81.7
67	Lake	Libertyville	1441 Lake St.	82	74	83	79.7
67	Lake	Waukegan	Golf & Jackson	88	88	88	88.0
67	Lake	Zion	Camp Logan	80	87	86	84.3
67	McHenry	Cary	1st St. & Three Oaks	80	78	90	82.7
67	Will	Braidwood	36400 S. Essex Rd	74	81	85	80.0
67	Will	S. Lockport	2021 Lawrence	71	73	83	75.7
	Metro-East						
70	Madison	Alton	409 Main St.	91	79	90	[illegible]
70	Madison	Edwardsville	Poag Road	82	88	92	[illegible]
70	Madison	Maryville	200 W. Division	88	84	85	[illegible]
70	Madison	Wood River	54 N. Walcott	88	84	84	[illegible]
70	Randolph	Houston	Twp Rds 150 & 45	72	82	82	78.7
70	St. Clair	East St. Louis	13th & Tudor	80	78	84	80.7
		Rest of Illinois					
65	Peoria	Peoria	Hurlbut & Mac Arthur	70	75	82	75.7
65	Peoria	Peoria Hts	508 E. Glen	73	76	82	77.0
66	Champaign	Champaign	606 E. Grove	76	83	94	84.3
69	Rock Island	Moline	30 18th St.	66	72	74	70.7
73	Winnebago	Loves Park	1405 Maple	73	71	77	73.7
73	Winnebago	Rockford	1500 Post	71	73	82	75.3
74	Effingham	Effingham	Route 45 South	77	83	92	84.0
74	Hamilton	Dale	State Route 142	74	75	80	76.3
75	Adams	Quincy	732 Hampshire	68	73	75	72.0
75	Jersey	Jerseyville	Liberty St.	82	91	100	[illegible]
75	Macon	Decatur	2200 N 22nd St.	77	78	87	80.7
75	Macoupin	Nilwood	Heaton & DuBois	76	79	85	80.0
75	Sangamon	Springfield	2875 N. Dirksen	71	78	75	74.7

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Table 3
1996 Precursor Emissions by County for the Chicago CMSA

NOx (TPD)				
County	**Point**	**Area**	**Mobile**	**Total**
Cook	115.34	22.37	440.18	577.89
DeKalb	2.28	0.32	7.84	10.44
DuPage	5.42	2.69	98.92	107.03
Grundy	13.62	0.15	11.47	25.24
Kane	2.92	1.43	33.90	38.25
Kankakee	6.38	0.34	13.60	20.32
Kendall	11.42	0.26	3.54	15.22
Lake	26.31	1.76	54.55	82.62
McHenry	5.95	0.53	22.11	28.59
Will	121.44	1.10	51.88	174.42

VOC (TPD)				
County	**Point**	**Area**	**Mobile**	**Total**
Cook	109.98	135.12	239.82	484.92
DeKalb	0.83	10.26	10.26	21.35
DuPage	9.70	23.69	57.08	90.47
Grundy	3.54	5.59	1.08	10.21
Kane	7.30	14.09	2.05	23.44
Kankakee	5.93	10.65	12.74	29.32
Kendall	1.56	6.31	2.34	10.21
Lake	7.85	17.63	40.19	65.67
McHenry	3.13	10.31	24.58	38.02
Will	16.66	17.69	28.54	62.89

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Table 4
1996 Precursor Emissions by
County for the Metro-East-St. Louis MSA

NOx (TPD)				
County	**Point**	**Area**	**Mobile**	**Total**
Clinton	14.46	0.14	8.86	23.46
Jersey	0.00	0.09	4.51	4.60
Madison	66.11	0.77	44.10	110.98
Monroe	0.80	0.08	13.39	14.27
St. Clair	26.41	0.72	37.47	64.60

VOC (TPD)				
County	**Point**	**Area**	**Mobile**	**Total**
Clinton	0.84	5.38	4.42	10.64
Jersey	0.07	3.45	2.43	5.95
Madison	24.62	14.31	25.77	64.70
Monroe	0.09	3.61	3.01	6.71
St. Clair	18.38	13.32	22.64	54.34

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TABLE 5
Population Estimates by County

CHICAGO CMSA
(Illinois Counties Only)

County	1998 Population	Area (Acres)	Population Density (Persons per acre)
Cook	5,189,689	612,132	8.5
DeKalb	84,169	406,033	0.2
DuPage	880,491	215,156	4.1
Grundy	36,686	275,414	0.1
Kane	391,249	335,249	1.2
Kankakee	102,107	435,660	0.2
Kendall	51,817	206,187	0.3
Lake	605,116	300,950	2.0
McHenry	240,945	390,743	0.6
Will	459,189	543,043	0.8

METRO-EAST-ST. LOUIS MSA
(Illinois Counties Only)

County	1998 Population	Area (Acres)	Population Density (Persons per acre)
Clinton	35,591	322,144	0.1
Jersey	21,373	241,928	0.1
Madison	259,351	474,043	0.5
Monroe	26,586	254,830	0.1
St. Clair	261,941	431,650	0.6

Table 6
Summary of 8-Hour Designation Factors
Chicago Area

	Cook	DeKalb	DuPage	Grundy	Kane	Kankakee	Kendall	Lake	McHenry	Will
AIR QUALITY										
Monitoring Above Standard	Y	N	N	N	N	N	N	Y	N	N
1-Hour Nonattainment	Y	N	Y	Y	Y	N	Y	Y	Y	Y
PRECURSOR EMISSIONS*										
NOx Emission	10	1	8	4	6	3	2	7	5	9
VOC Emissions	10	3	9	1	4	6	2	8	5	7
DEMOGRAPHICS*										
1998 Population	10	3	9	1	6	4	2	8	5	7
Population Density	10	2	9	1	7	3	4	8	5	6
Urban Land Cover (Total Acres)	10	3	9	2	6	4	1	8	5	7
Population Projections (% Change)	1	5	2	4	7	3	8	6	9	10
Employment Projections (% Change)	3	2	10	1	8	9	5	6	7	4
TOTAL	54	19	56	14	44	32	24	51	41	50

*Data is ranked for each category with 10 being the highest rank and 1 being the lowest

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Table 7
Summary of 8-Hour Designation Factors
Metro-East Area

	Clinton	Jersey	Madison	Monroe	St. Clair
AIR QUALITY					
Monitoring Above Standard	N	Y	Y	N	N
1-Hour Nonattainment	N	N	Y	Y	Y
PRECURSOR EMISSIONS*					
NOx Emissions	3	1	5	2	4
VOC Emissions	3	1	5	2	4
DEMOGRAPHICS*					
1998 Population	2	1	5	3	4
Population Density	3	1	4	2	5
Urban Land Cover (Total Acres)	3	1	5	2	4
Population Projections (% Change)	1	4	2	5	3
Employment Projections (% Change)	1	4	2	3	5
TOTAL	16	13	28	19	29

*Data is ranked for each category with 5 being the highest rank and 1 being the lowest.

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Table 8
Recommended Attainment/Nonattainment Designations in Illinois For the 8-Hour Ozone 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	

File:G:brenda:rk-8hrnaaqs-tables.doc

Figure 1
Current Ozone Nonattainment Areas for the 1-Hour Standard

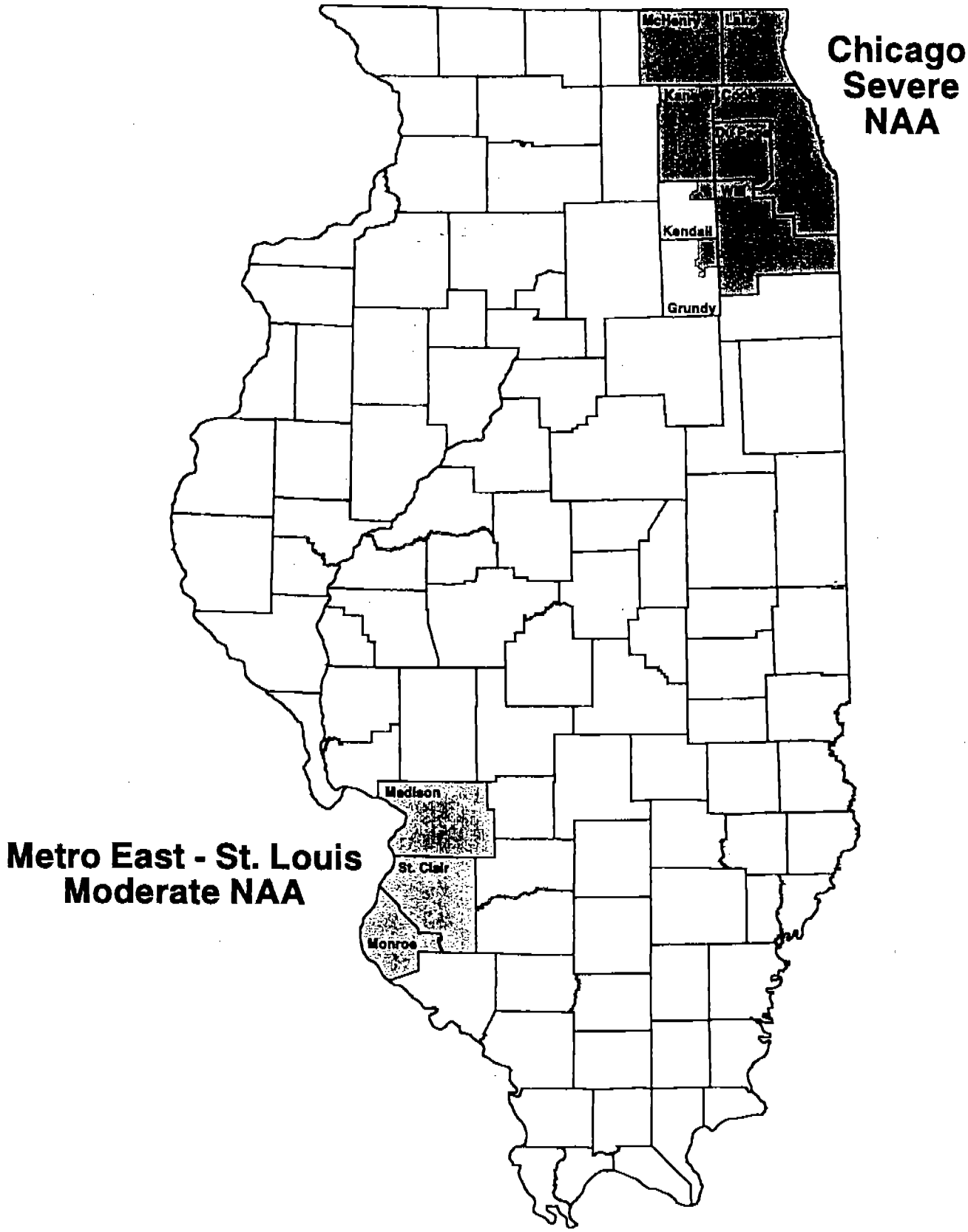


Figure 2

Illinois 8-hour Ozone Design Values

1997-1999

Illinois EPA
Bureau of Air

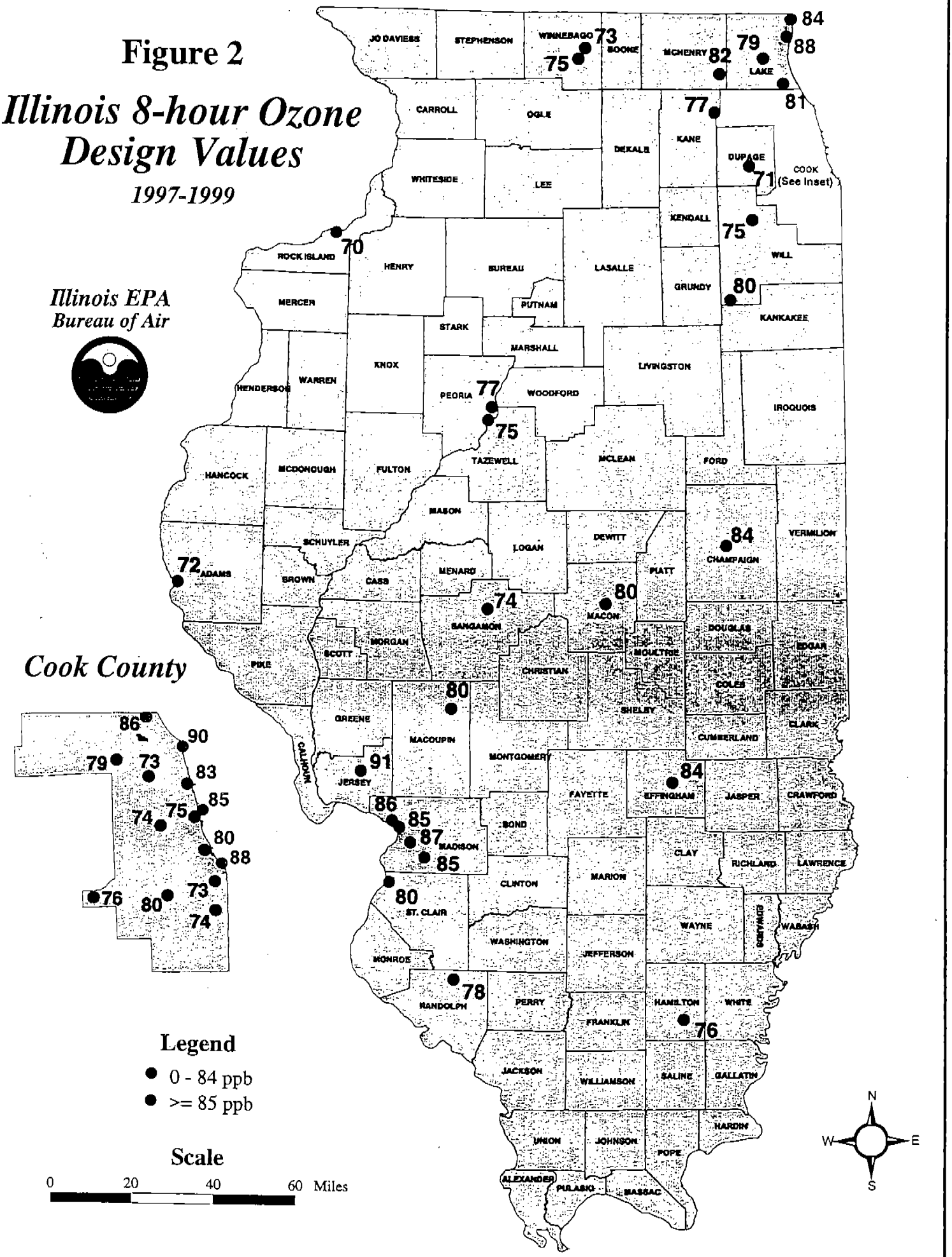
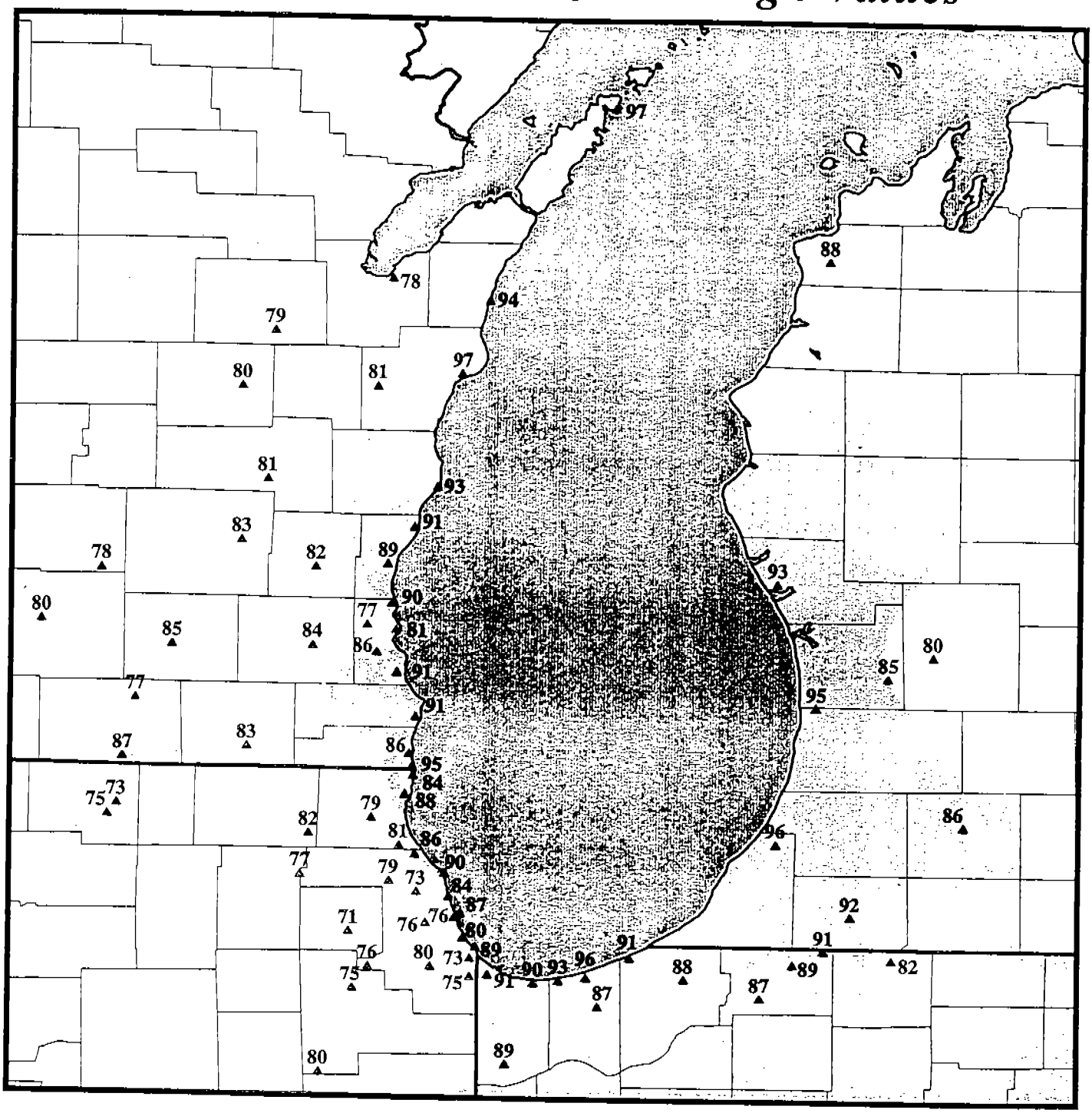


Figure 3
Lake Michigan Region
1997-1999 8-hour Ozone Design Values



Illinois EPA

Legend

▲ Ozone Monitors

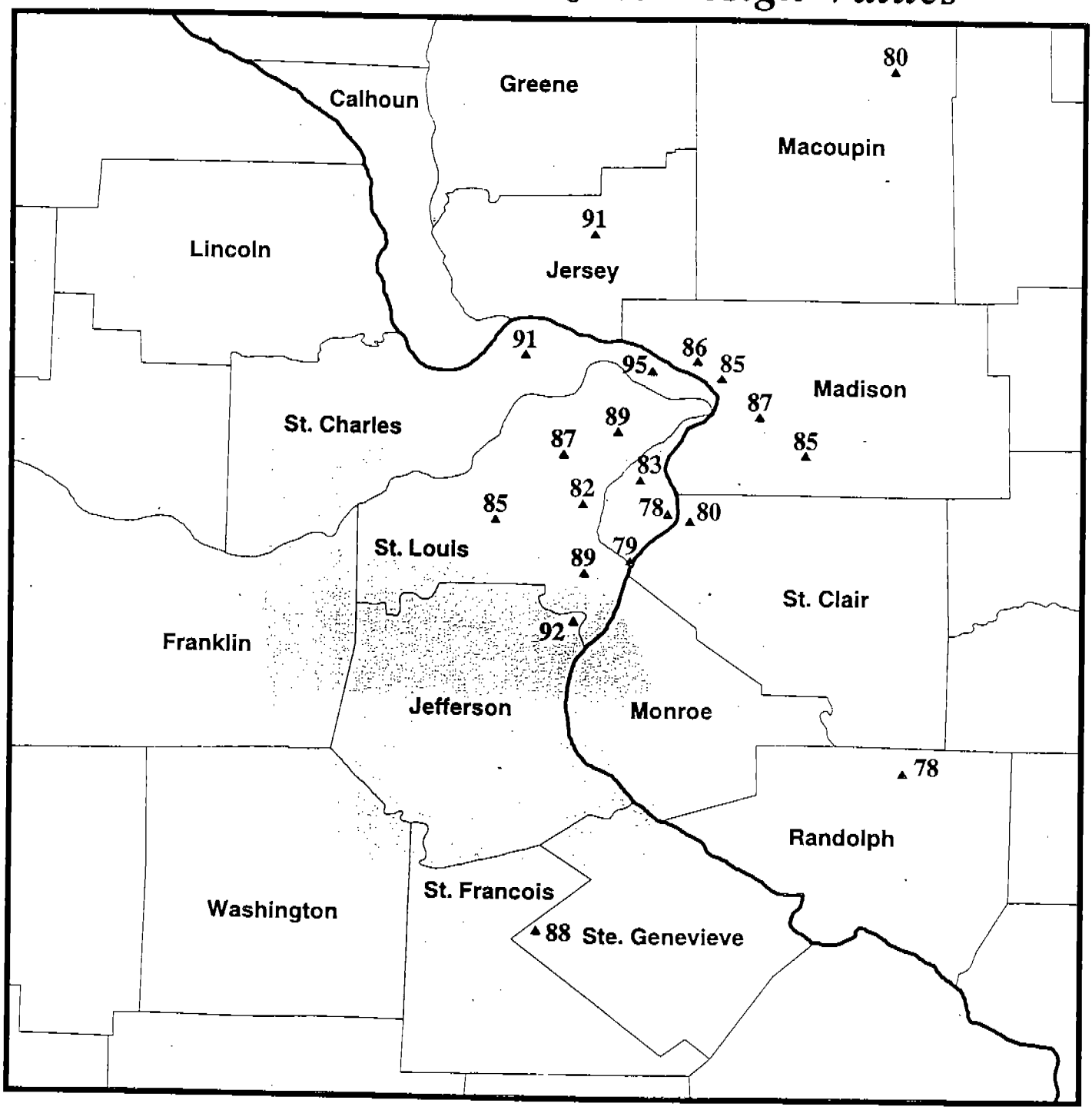
Areas >= 85 ppb

Scale

0 40 80 120 Kilometers

N
W E
S

Figure 4
St. Louis Metropolitan Area
1997-1999 8-hour Ozone Design Values



Illinois EPA

Legend

▲ Ozone Monitors

▭ Areas >= 85 ppb

Scale

0 20 40 60 Kilometers

N W E S

Figure 5

1996 Precursor Emission Densities for Chicago Area

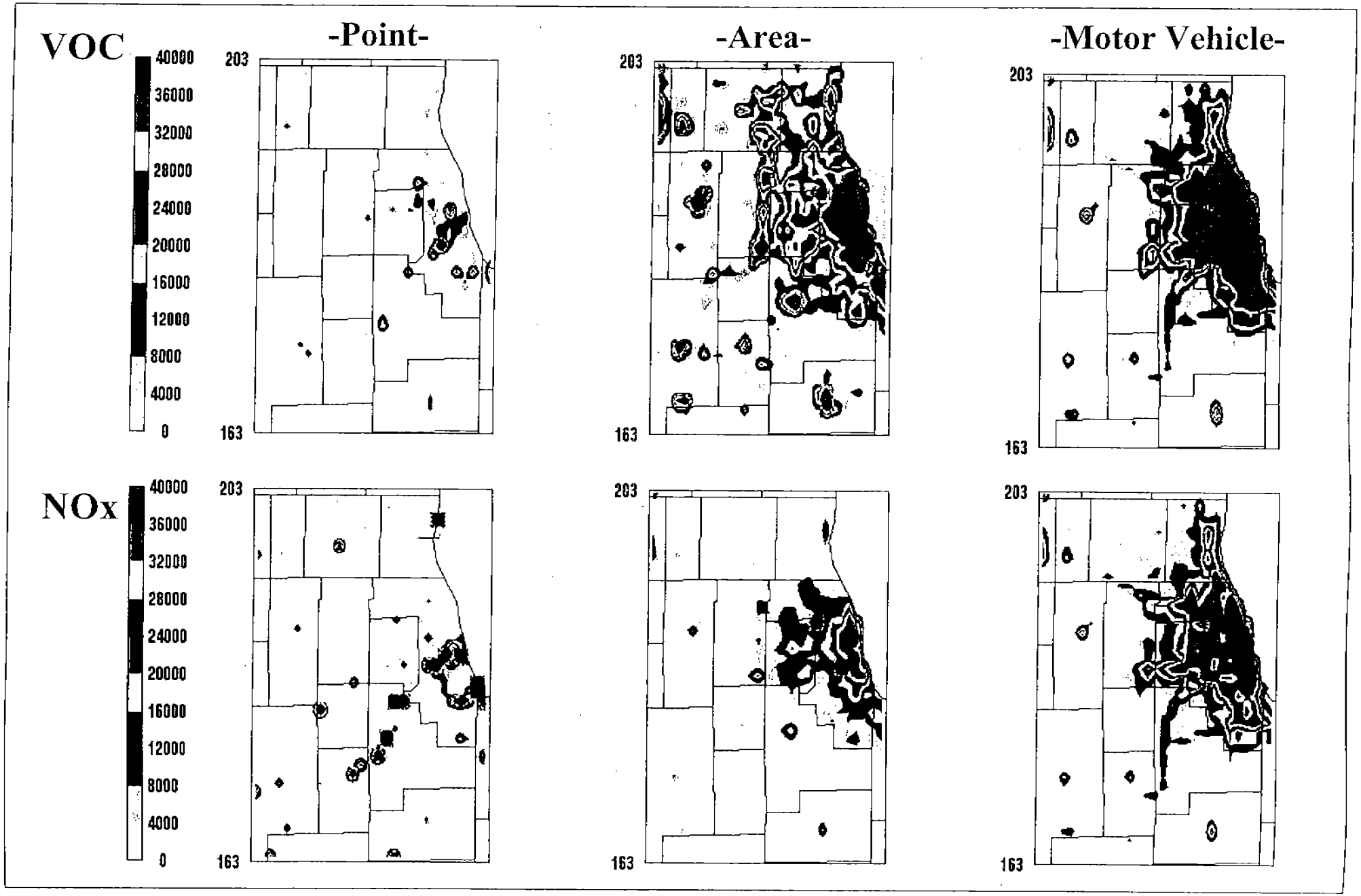


Figure 6

1996 Precursor Emission Densities
St. Louis Area

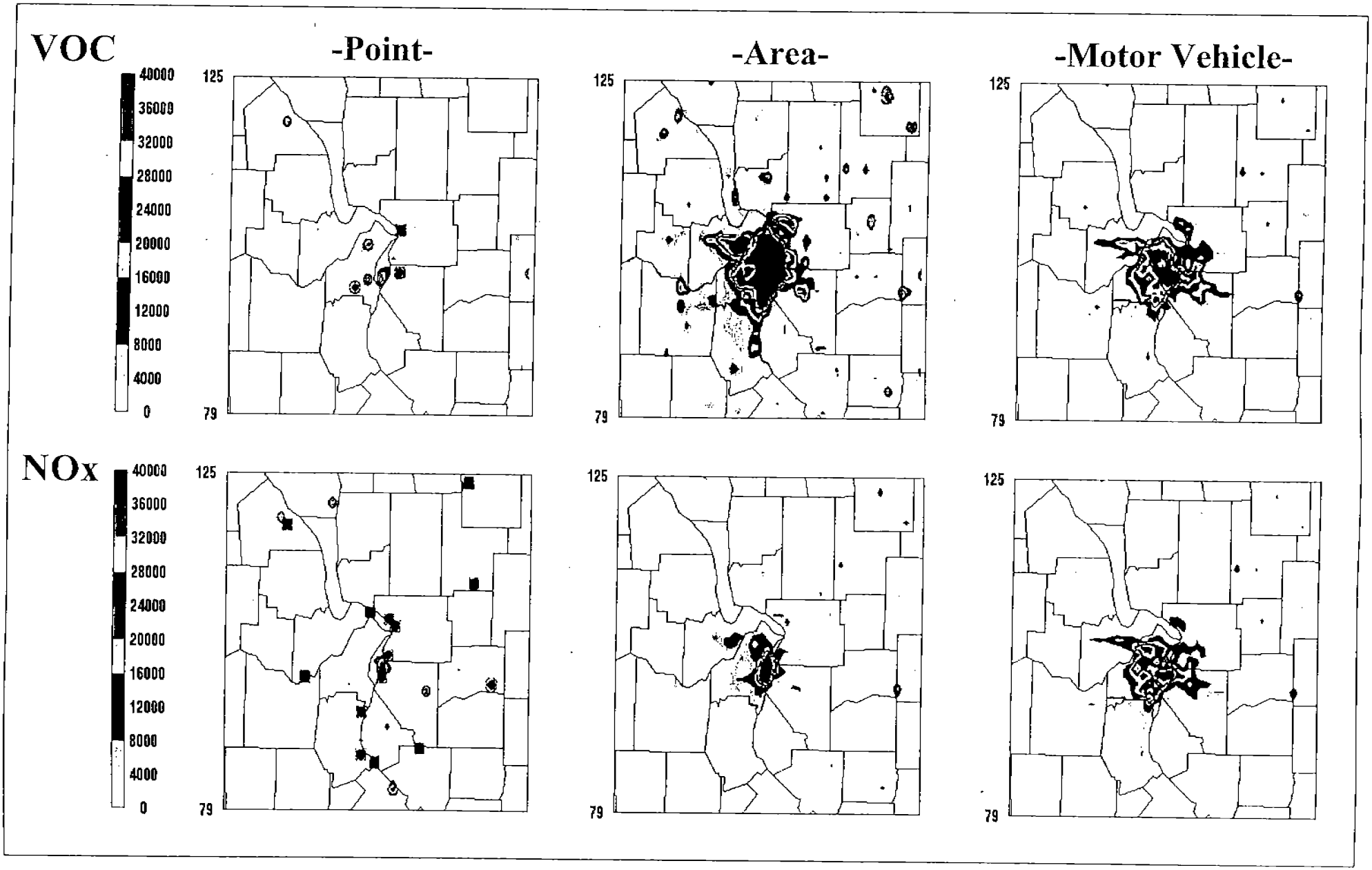
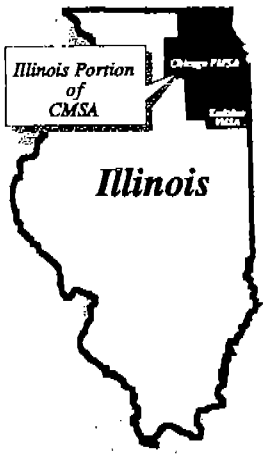
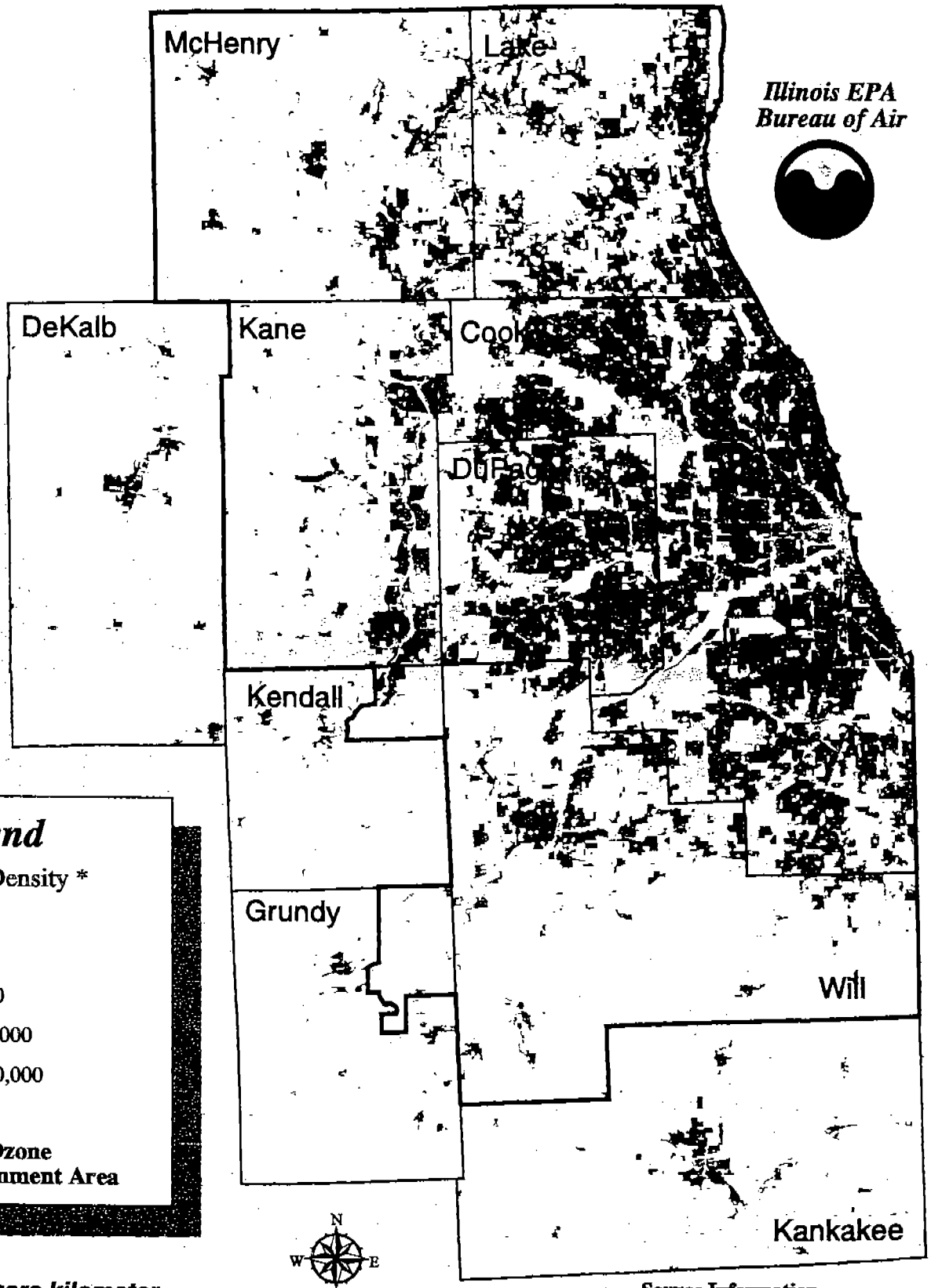


Figure 7

1990 Population Density
Chicago-Gary-Kenosha CMSA
(Illinois portion)





Illinois EPA
Bureau of Air

Legend

1990 Population Density *

- 0
- 0 - 200
- 200 - 2,000
- 2,000 - 10,000
- 10,000 - 40,000
- > 40,000
- 1 Hour Ozone Nonattainment Area

***Persons per square kilometer within a census block**

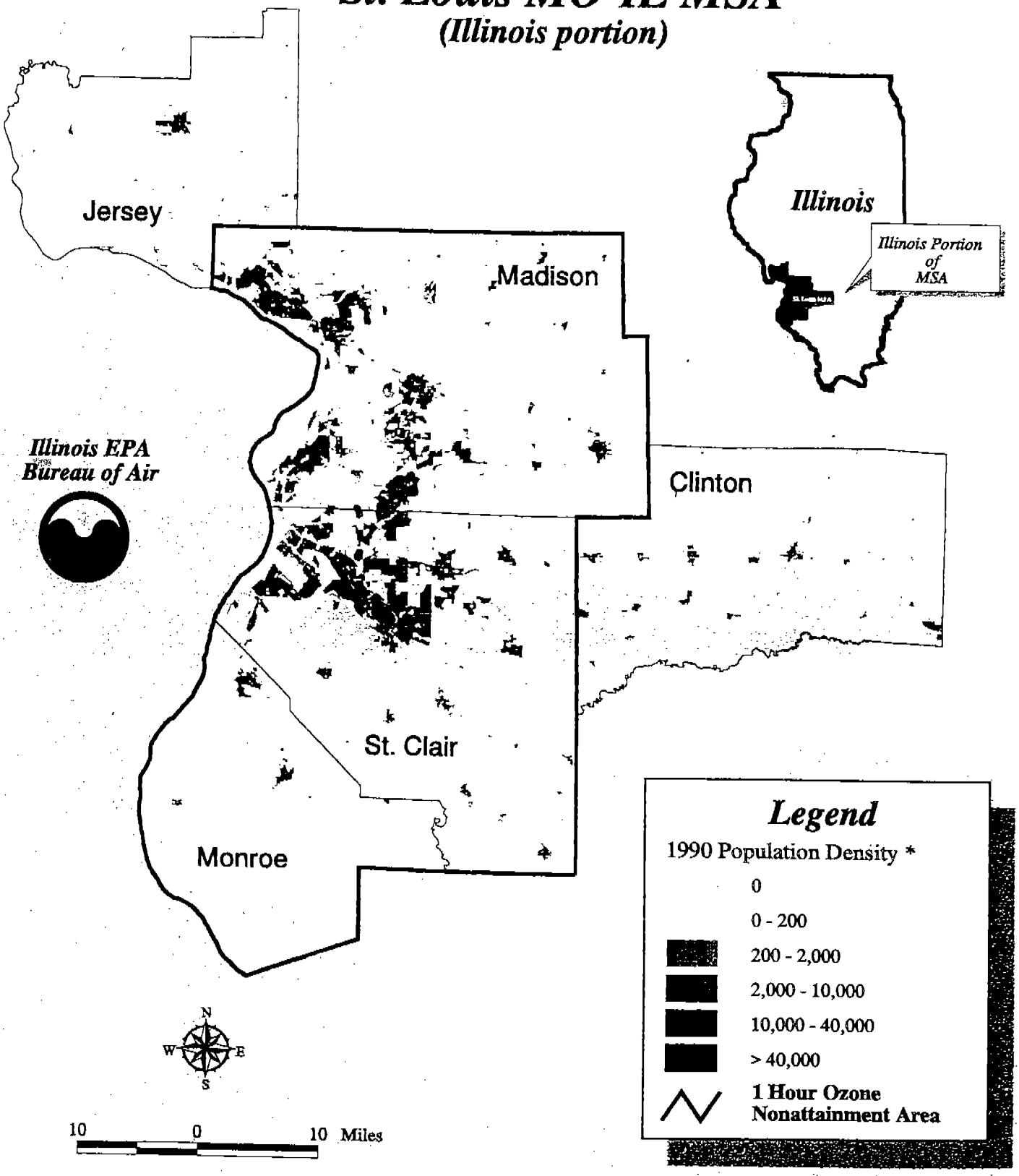
Source Information

DNR CDROM: U.S. Census Bureau; Office of Management and Budget 1998 Consolidated Metropolitan Statistical Areas (CMSAs) Datafile
Chicago and Kankakee PMSA portion shown

Figure 8

1990 Population Density St. Louis MO-IL MSA

(Illinois portion)



Source Information

DNR CDROM: U.S. Census Bureau;
Office of Management and Budget 1998 Metropolitan Statistical Areas (MSAs) Datafile St. Louis, IL MSA portion shown

Persons per square kilometer within a census block

Figure 9

Land Cover in Chicago-Gary-Kenosha CMSA (Illinois Portion)

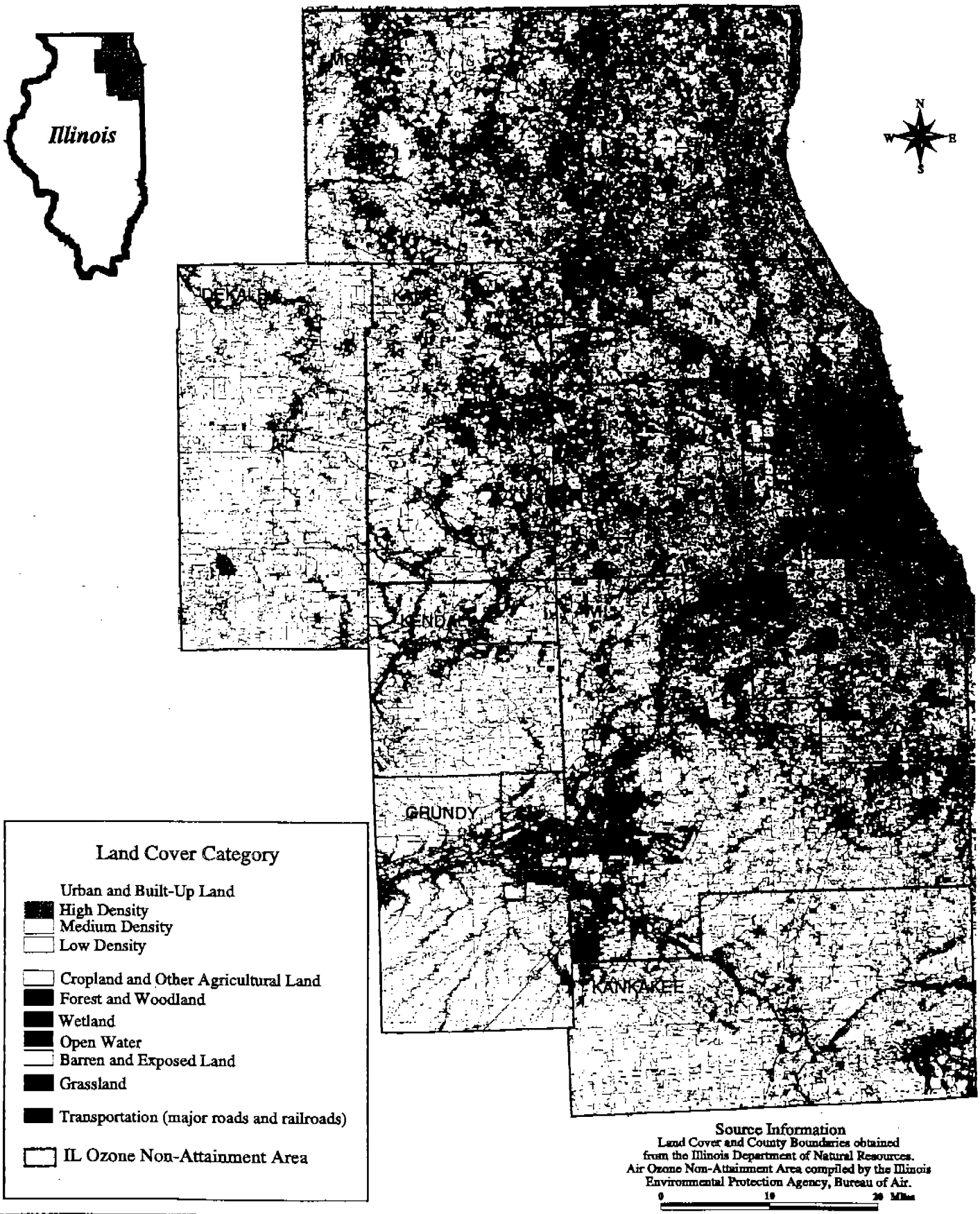
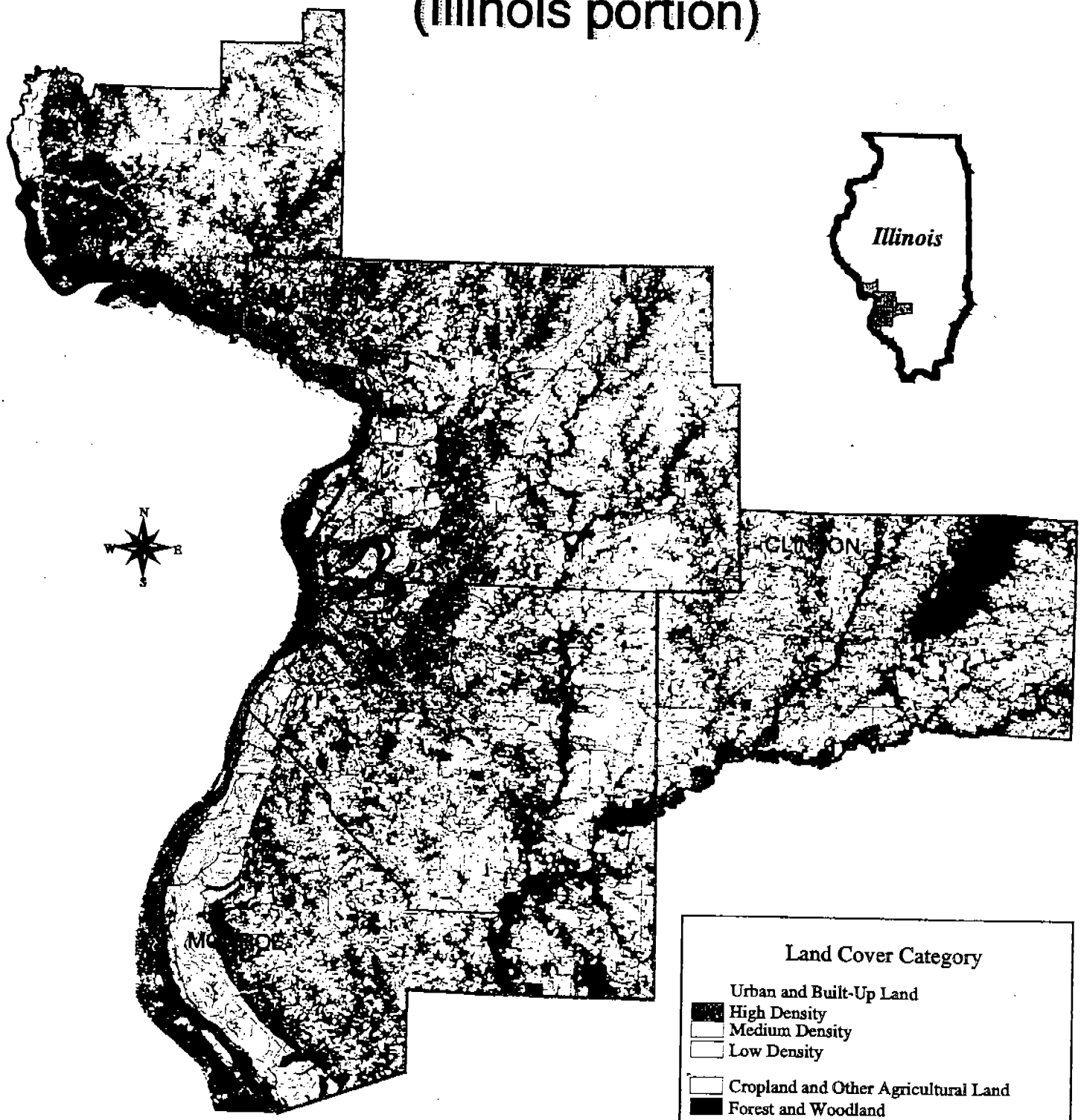


Figure 10

Land Cover in St. Louis MO-IL MSA (Illinois portion)



Land Cover Category

Urban and Built-Up Land
- High Density
- Medium Density
- Low Density

- Cropland and Other Agricultural Land
- Forest and Woodland
- Wetland
- Open Water
- Barren and Exposed Land
- Grassland
- Transportation (major roads and railroads)
- IL Ozone Non-Attainment Area

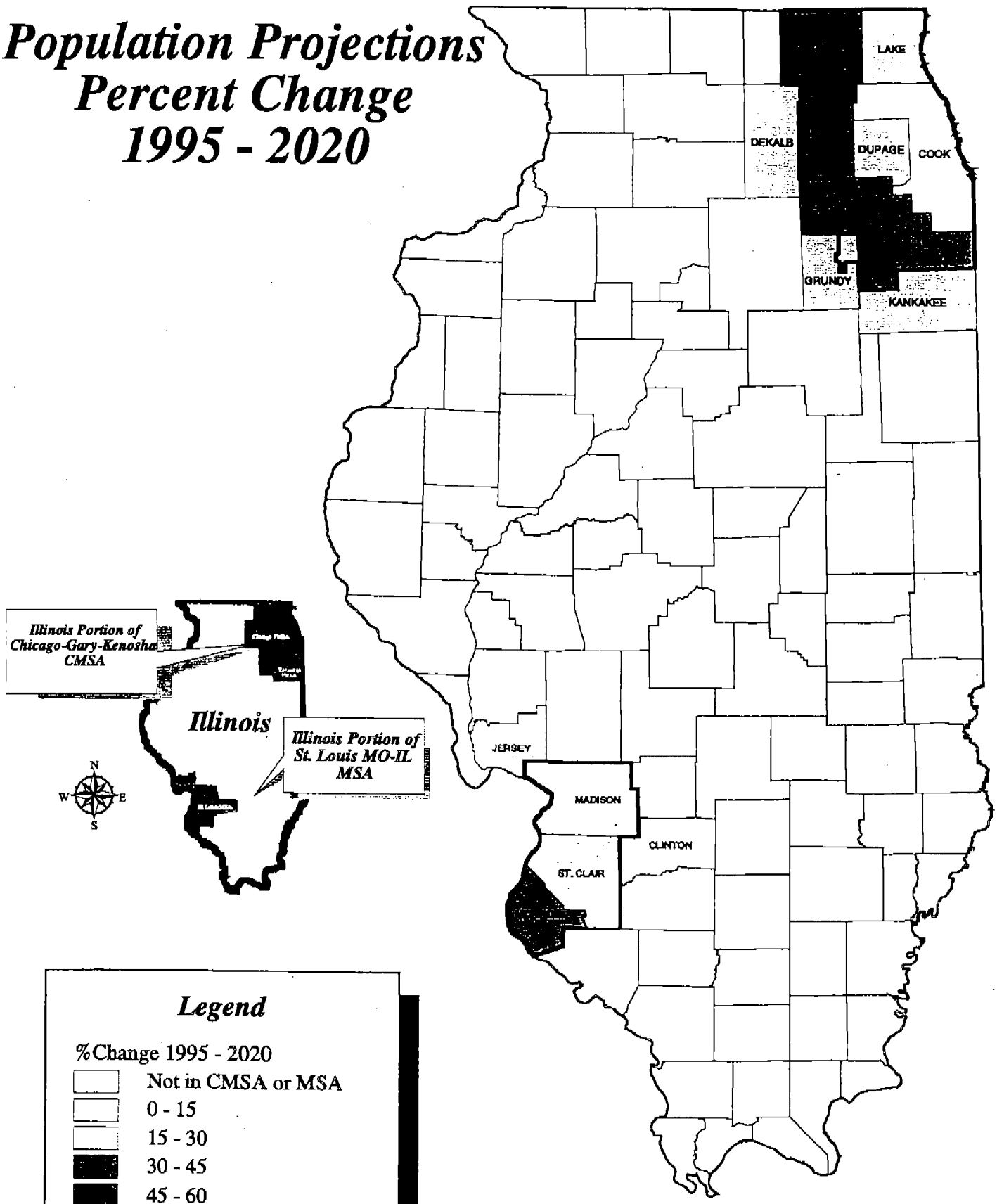
Source Information

Land Cover and County Boundaries obtained from the Illinois Department of Natural Resources. Air Ozone Non-Attainment Area compiled by the Illinois Environmental Protection Agency, Bureau of Air.

0 10 20 Miles

Figure 11

Population Projections Percent Change 1995 - 2020



Legend

%Change 1995 - 2020

- Not in CMSA or MSA
- 0 - 15
- 15 - 30
- 30 - 45
- 45 - 60
- > 60
- 1 Hour Ozone Nonattainment Area

Source Information
Economic Development and Planning Database
Community Research Services;Illinois State University
Office of Management and Budget
1998 Statistical Areas Datafile

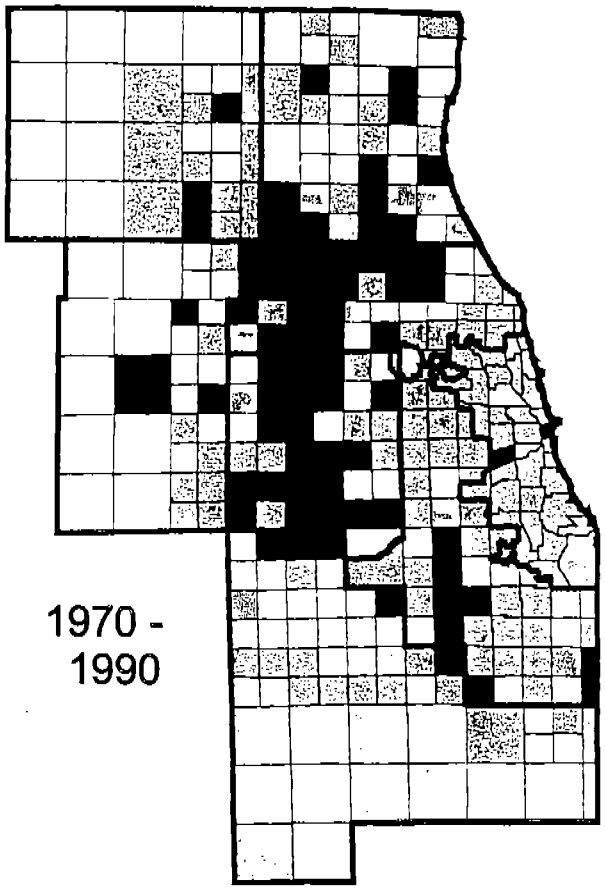
Figure 11a

Population Change

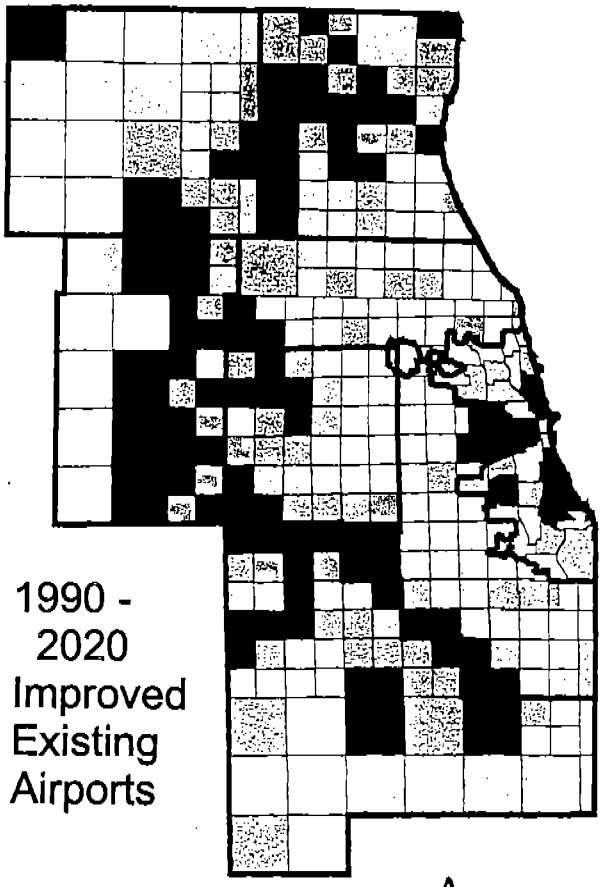
Annual Change

- Loss > 75
- -75 - 75
- 76 - 150
- 151 - 250
- 251 - 400
- Over 400

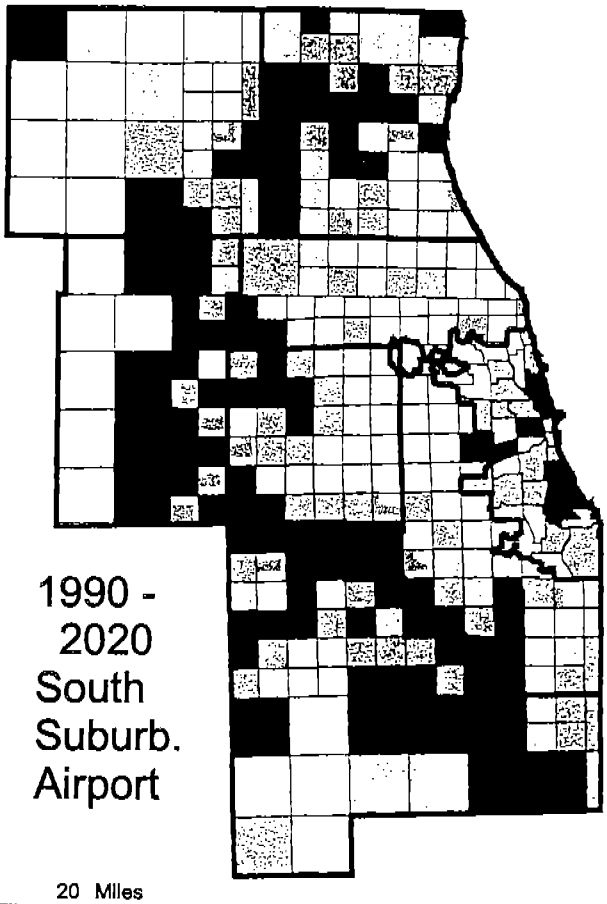
Forecasts endorsed by
Northeastern Illinois
Planning Commission
November 1997



1970 - 1990



1990 - 2020 Improved Existing Airports



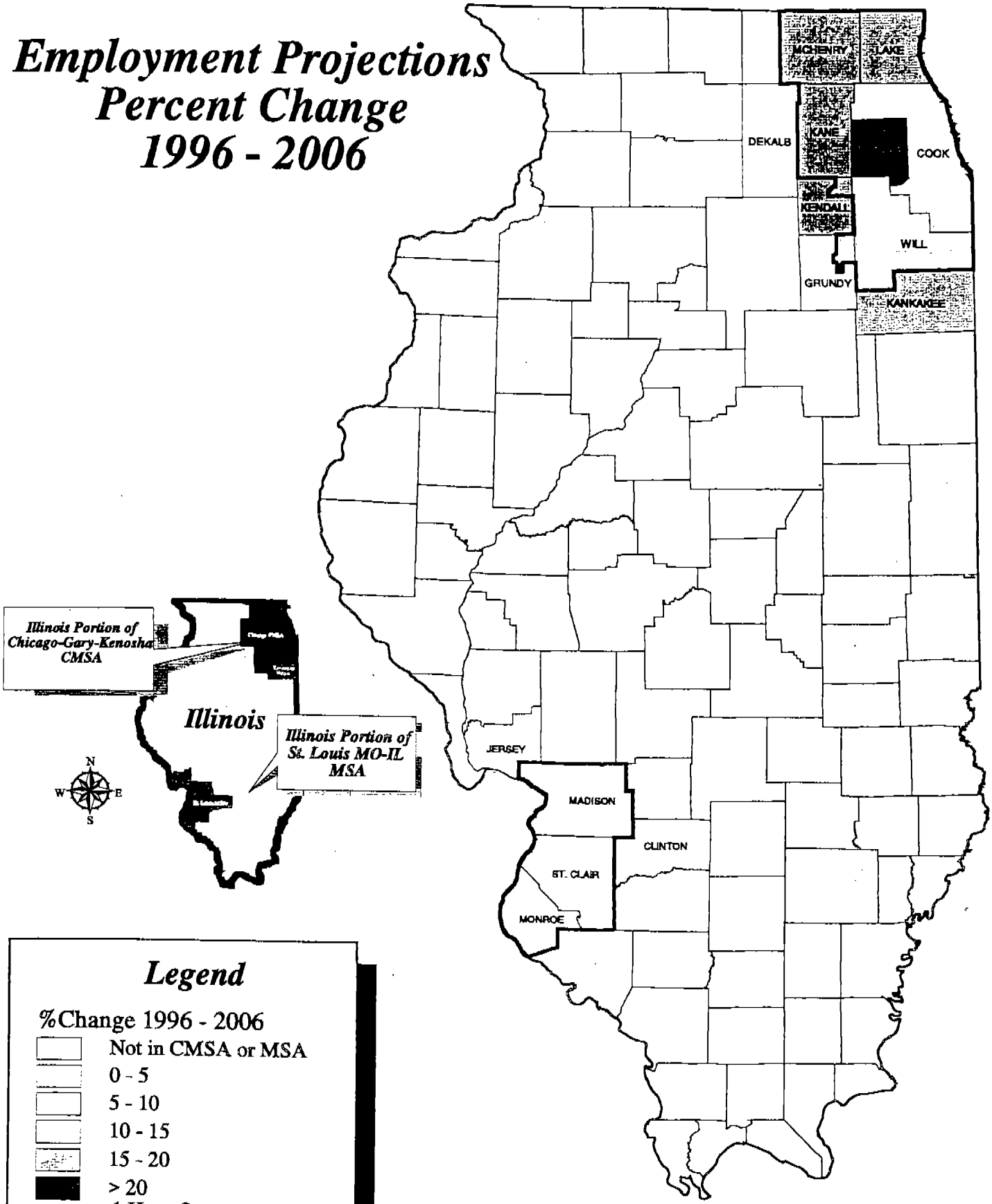
1990 - 2020 South Suburb. Airport

N

0 10 20 Miles

Figure 12

Employment Projections Percent Change 1996 - 2006



Legend

%Change 1996 - 2006

- Not in CMSA or MSA
- 0 - 5
- 5 - 10
- 10 - 15
- 15 - 20
- > 20
- 1 Hour Ozone Nonattainment Area

Source Information
Economic Development and Planning Database
Community Research Services;Illinois State University
Office of Management and Budget
1998 Statistical Areas Datafile

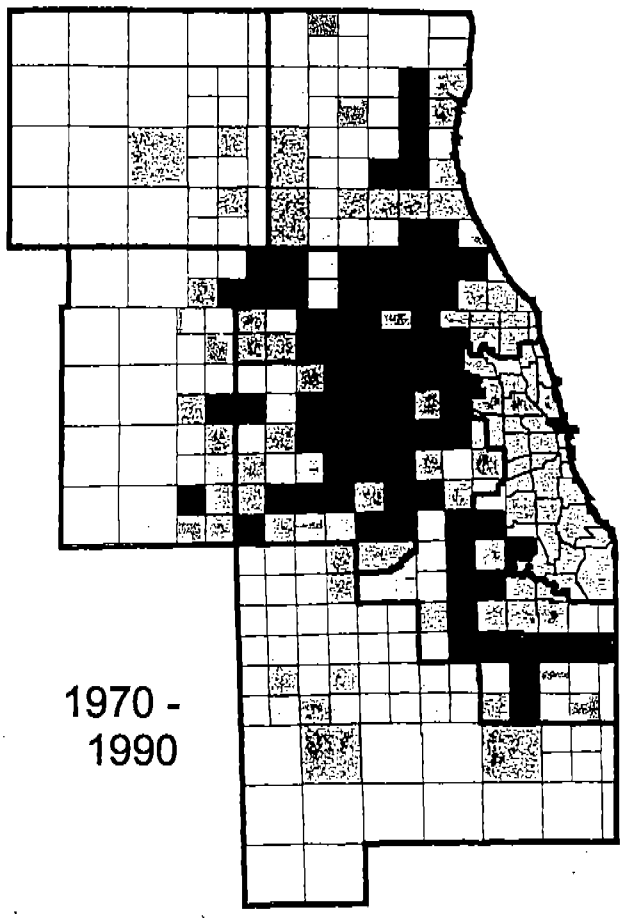
Figure 12a

Employment Change

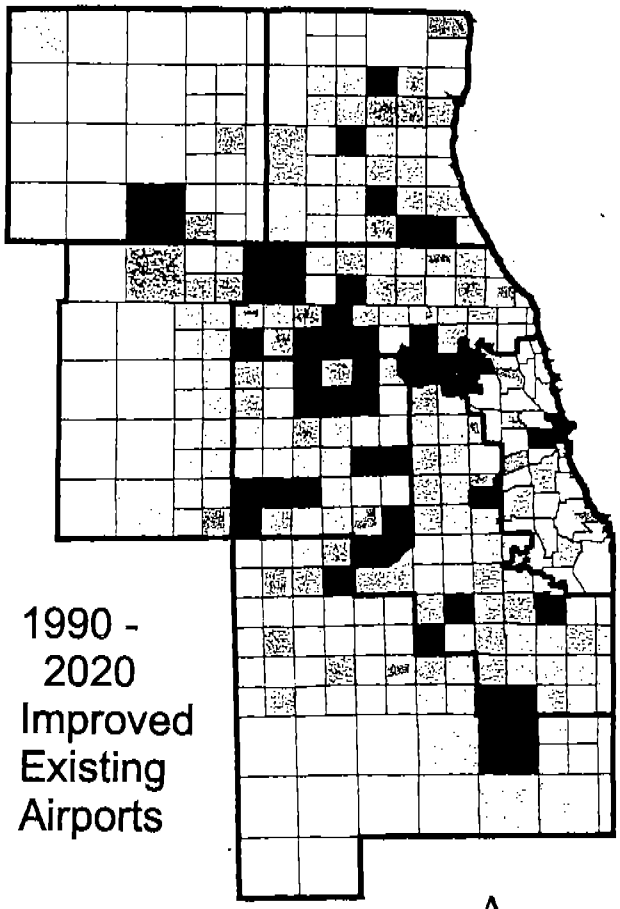
Annual Change

- Loss > 75
- -75 - 75
- 76 - 150
- 151 - 250
- 251 - 400
- Over 400

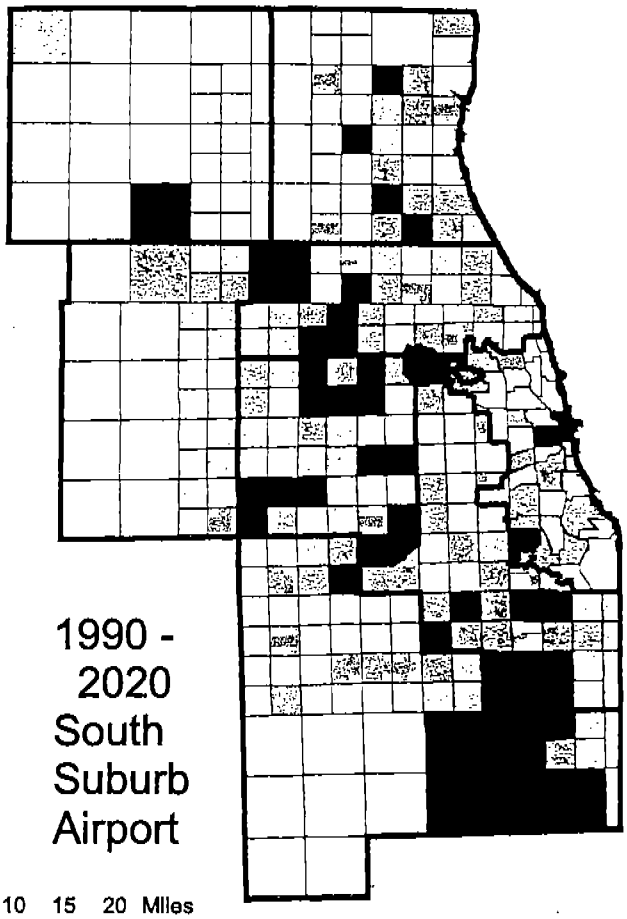
Forecasts endorsed by Northeastern Illinois Planning Commission November 1997



1970 - 1990



1990 - 2020 Improved Existing Airports

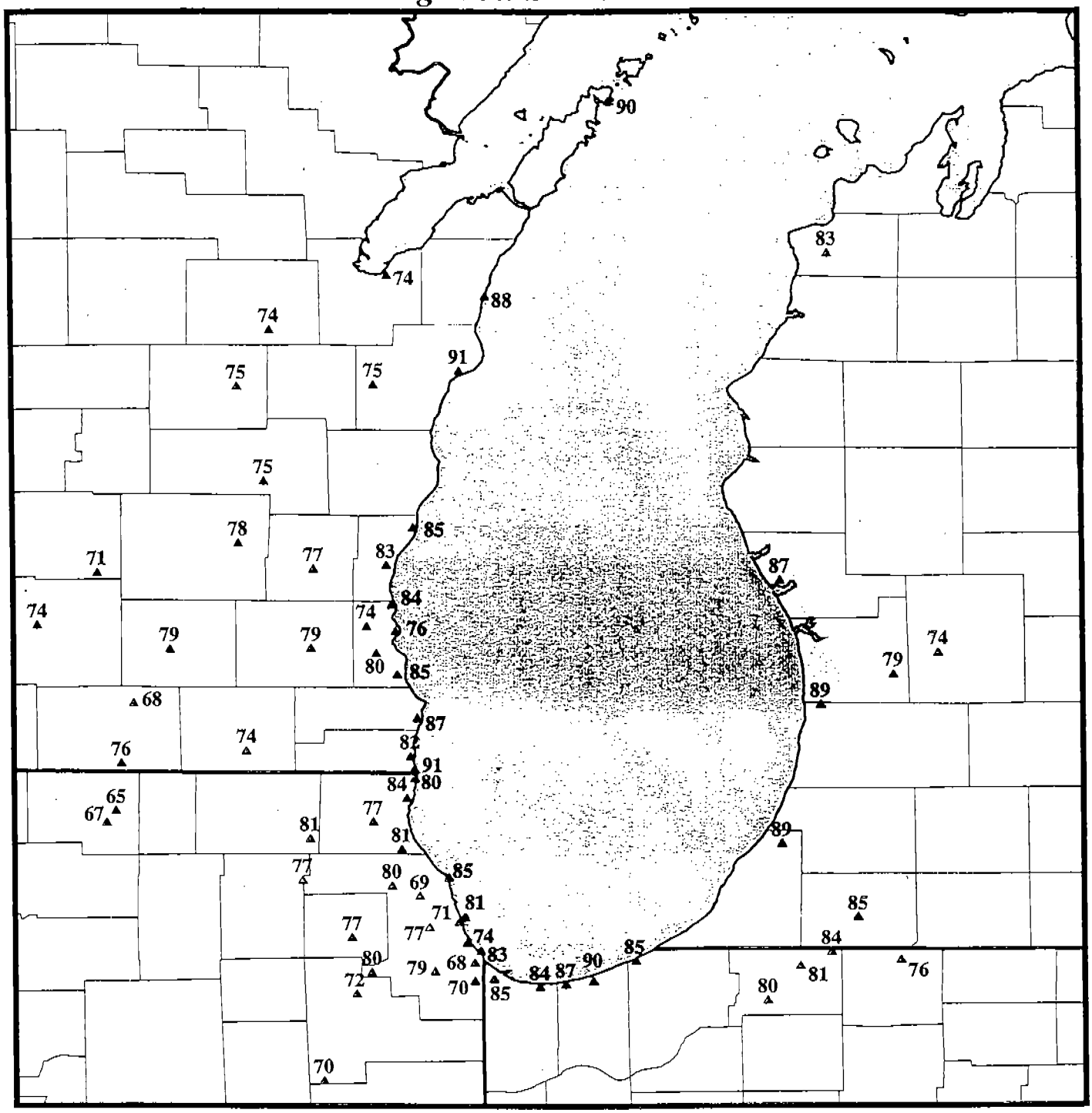


1990 - 2020 South Suburb Airport

N

0 5 10 15 20 Miles

Figure 13
Lake Michigan Region
Projected 8-hour Ozone Design Values in 2007
Assuming NOx SIP Call Controls



Illinois EPA

Legend

▲ Ozone Monitors

Areas >= 85 ppb

Scale

0 40 80 120 Kilometers

N W E S

Figure 14
St. Louis Metropolitan Area
Projected 8-hour Ozone Design Values in 2007
Assuming NOx SIP Call Controls

Illinois EPA

Legend

▲ Ozone Monitors

Areas >= 85 ppb

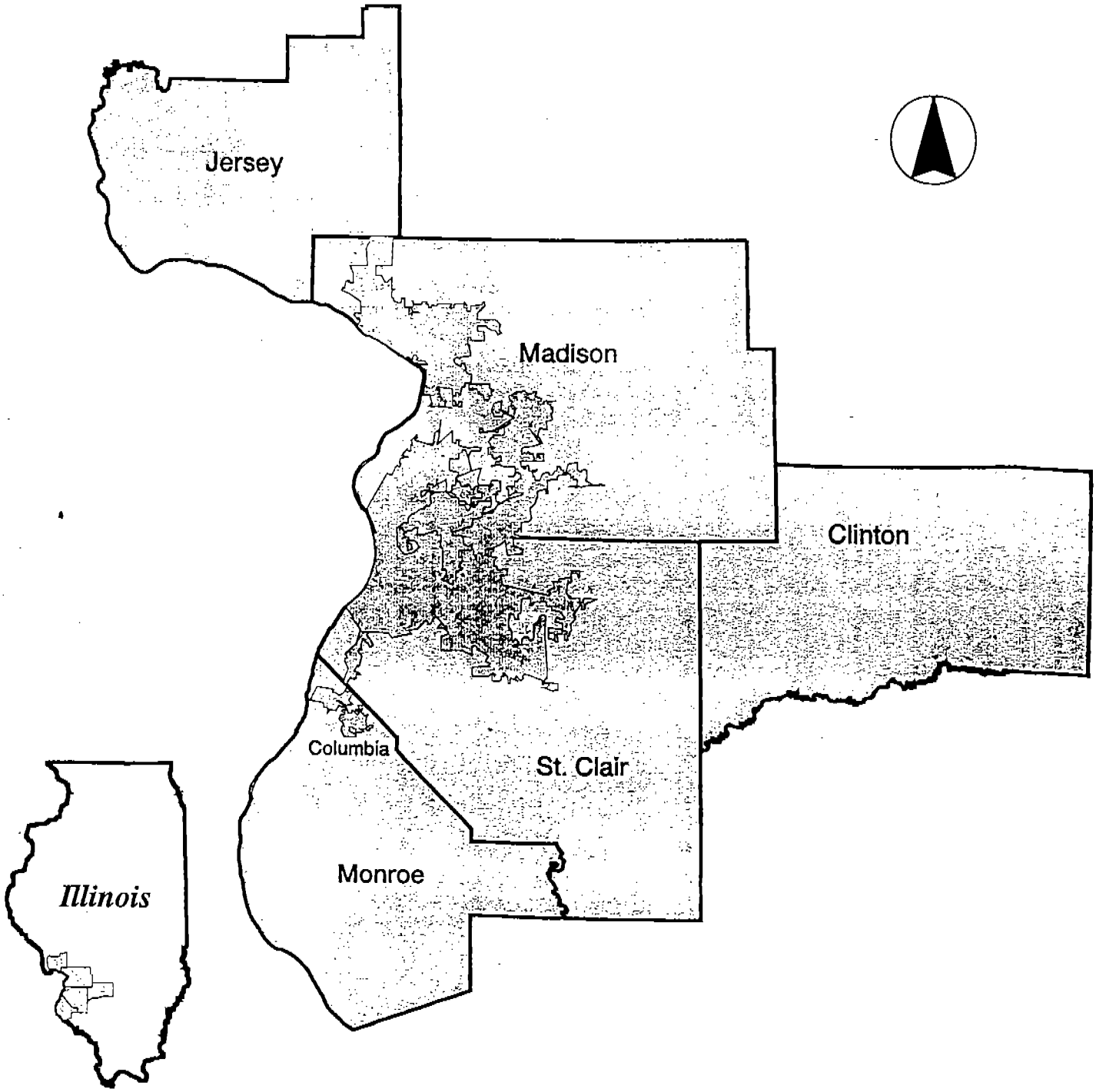
N
W E
S

Scale

0 20 40 60 Kilometers

Figure 15

Contiguous Urbanized Areas
Metro-East Area

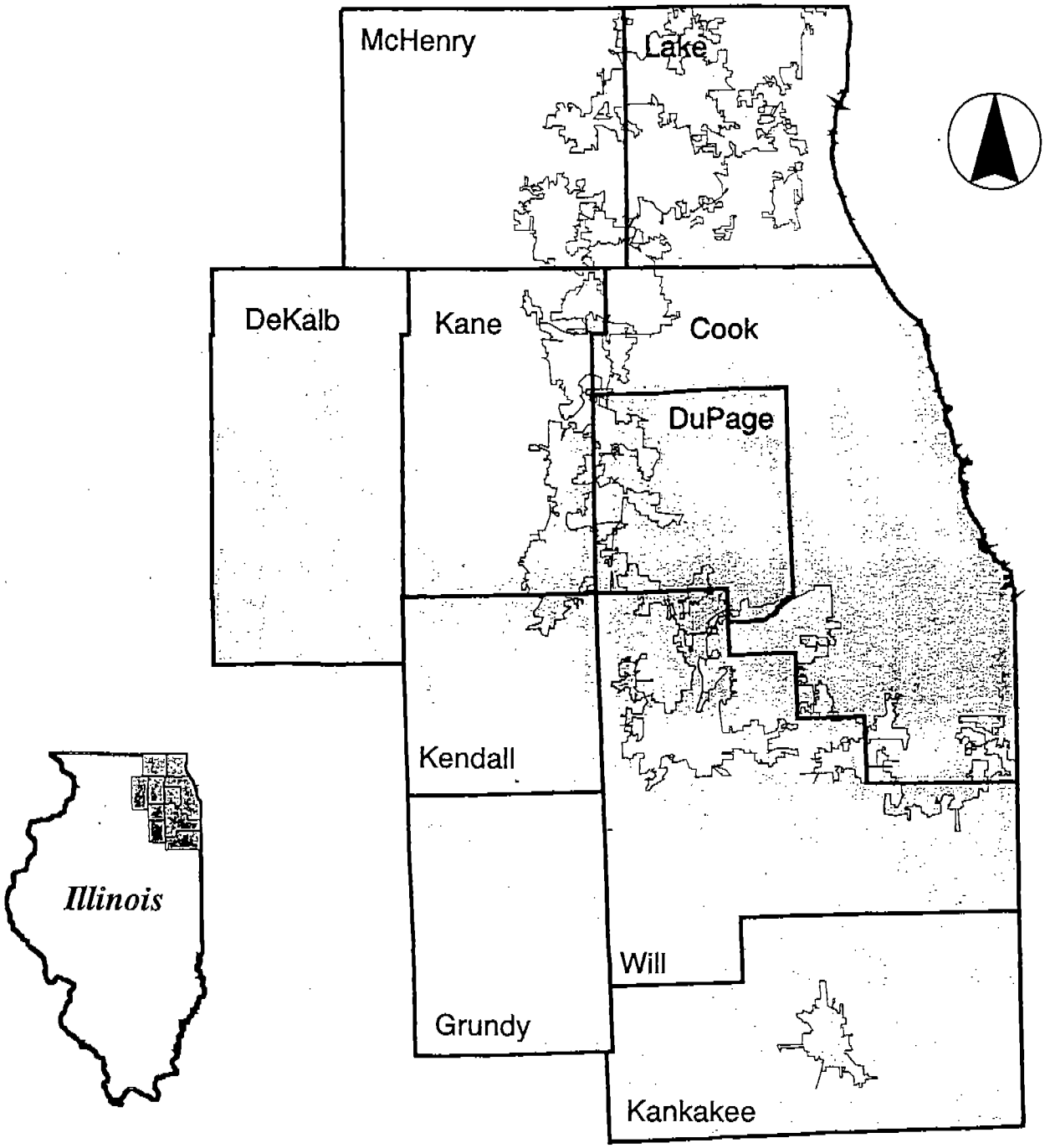


Contiguous Urbanized Areas
Extent of MSA

Based on 1990 Census Bureau Data

Figure 16

Contiguous Urbanized Areas Chicago Region



Contiguous Urbanized Areas
Extent of CMSA

Based on 1990 Census Bureau Data