

SECTION 6

2030 Travel Forecast and Future System Performance

2030 Travel Forecast and Future System Performance

6.1 Introduction

To examine the adequacy of Will County's transportation system over the planning horizon, it is necessary to assemble a forecast of the rate, type, and location of growth, and household travel characteristics. In the preparation of this transportation plan, information on land use, described as population and employment, was obtained from NIPC. The 2030 forecasts were furnished by quarter-section for the entire Chicago metropolitan area.

The methodology used in the development of the Will County travel demand model has been described earlier in Section 5. This section of the report describes the application of the model to forecast 2030 travel demand and the operational performance of the future system.

6.2 Population and Employment Forecasts

The projections of population, households, and employment by Transportation Analysis Zone (TAZ) are the basic tools used in developing forecasts of future travel. The estimated values were applied directly into trip generation relationships determined earlier in the transportation planning process (Section 5.5). The source of these forecasts for the Chicago region, including Will County, is NIPC. The NIPC socioeconomic forecasts generally reflect development projections established at a municipal level that are considered in reference to overall growth in the region. At the time of this project, the NIPC 2030 forecasts were a few years old, so a series of workshops and public meetings were held to identify any changes in development patterns since the forecasts were released. County and municipal representatives and the public typically agreed that the NIPC projections were accurate, with a few minor modifications. To study the effect of proposed changes in population and employment for the year 2030, a second forecast was developed based on feedback from local officials and the public. This alternative forecast is called the action-oriented forecast.

6.2.1 Northeastern Illinois Planning Commission Forecast

NIPC (now part of CMAP, as discussed in Section 1) is an agency that was created by Illinois legislation in 1957. It serves as the primary planning agency for the Chicago metro area, currently consisting of Cook, Lake, McHenry, DuPage, Kane, Will, and part of Kendall Counties.

NIPC uses a variety of information sources to develop population, household, and employment forecasts for this region, including census information and a program called Paint the Town, which solicits information from local municipalities as to where and how they believe growth will occur in the future. NIPC is responsible for the base population, household, and employment forecasts used in this 2030 analysis of Will County. **Table 6-1** summarizes projected growth of population, households, and employment from 2000 until 2030.

TABLE 6-1
Projected Growth of Population, Households, and Employment—Will County 2000–2030

	2000	2030	Percent Increase
Population	502,266	1,107,778	120.6
Households	167,542	358,867	114.2
Employment	169,317	443,370	161.8

Source: 2030 NIPC Forecast, September 2003

The distribution of projected 2030 population density in Will County is shown in [Figure 6-1](#). Forecasted growth of population between 2000 and 2030 is depicted in [Figure 6-2](#). Generally, population growth is the heaviest along the northwestern boundary and the central section of the county. Substantial population growth also occurs to the north of the South Suburban airport footprint.

Employment growth in Will County is illustrated in [Figures 6-3](#) and [6-4](#). Forecasted employment density by TAZ is shown in [Figure 6-3](#), while estimated employment growth from 2004 to 2030 is shown in [Figure 6-4](#). Pockets of heavy employment growth occur throughout the county, mostly concentrated in the north and near interstates and other major routes.

6.2.2 Action-Oriented Forecast

The action-oriented population, household, and employment forecasts served to update the NIPC forecasts to account for development and information that was not available when NIPC created its projection.

A series of public meetings, workshops with local officials, and other meetings with officials served to solicit opinions as to the accuracy of the NIPC forecasts in Will County and the surrounding area (Section 7.3). With a few exceptions, it was generally agreed that the NIPC projections were fairly accurate within the county. There were a few high growth areas where growth was underrepresented, especially in the northwest portion of the county. There were also a few areas, primarily around the South Suburban Airport, where local officials felt the NIPC projections were high. Population and employment were therefore redistributed slightly within the county; however, the control total (total number of people and jobs within the county) was kept constant.

There was also an almost universal sentiment that the areas just outside of the county were underrepresented by the NIPC forecasts. This population and employment was affecting the demand on the Will County transportation system. After a series of meetings with officials from the neighboring areas to the east and west, the totals for these surrounding areas were increased as shown in [Figure 6-5](#) and [Figure 6-6](#).

Analysis of the action-oriented scenario showed that it did not result in significant changes in the transportation system performance. Because of this, analysis proceeded using the NIPC 2030 forecasts.

6.2.3 External Travel Growth

External trip making consists of three distinct types of trip: Internal-External (IE) trips that originate in a Will County TAZ and have a destination outside of the county; External-Internal (EI) trips that have an origin outside of the county and a destination within the county; and External-External (EE) through trips that have neither an origin nor destination in Will County.

In calibrating the base year model, external trips were derived from the 1996 CATS vehicular trip matrices for the entire metropolitan area and then increased to year 2003 values. A percentage growth factor for external travel was derived from the CATS data and applied to the external trips within the Will County model creating 2030 external travel numbers.

6.3 Existing Plus Committed Transportation System

For the initial 2030 performance analysis, the committed projects should be included and incorporated into the transportation system. The transportation network consists of the existing system augmented by other improvements that are programmed or otherwise firmly committed for improvement in the near term. Committed improvements utilized to develop the Existing plus Committed Network are shown in [Figure 6-7](#) and listed in Table 6-2.

TABLE 6-2
Committed Projects

Project	Limits	Type	Notes
I-355	I-80 to I-55	New Tollway 6 lanes north of IL 127 4 lanes south of IL 127	Interchanges at I-55, 127th Street, IL 171/143rd Street, IL 7, U.S. 6, I-80
IL 59	I-55 to IL 126	Widen to 4 lanes	
U.S. 30	Essington Road to Larkin Avenue	Widen to 4 lanes	
Caton Farm Road	Kendall County Line to IL 59	Widen to 4 lanes	
111th Street	IL 59 to Plainfield-Naperville Road	Widen to 4 lanes*	
191st Street	Wolf Road to U.S. 45	Widen to 4 lanes*	
191st Street	80th Avenue to Harlem Avenue	Widen to 4 lanes*	
Plainfield/Naperville Rd.	111th Street to 95th Street	Widen to 4 lanes	
Veterans Parkway	Lily Cache to Cross Roads Parkway	Widen to 4 lanes	
Arsenal Road	Baseline Road to I-55	Widen to 4 lanes	
Baseline Road		Widen to 4 lanes*	
I-55/Arsenal Road Interchange		Improve and shift south	

*Completed since initiation of Long Range Plan Study.

The SSA is considered a base assumption in the 2030 NIPC forecasts. The 2030 network was modified to accommodate this assumption by removing roadways that would be eliminated as part of the development of the airport. The fall 2005 airport footprint provided by IDOT was used as the estimation of the influence area of the airport and the available SSA master planning documentation was referenced for access to the airport facility.

6.4 2030 Vehicle Traffic Volumes and Patterns

The traffic demand model was applied to forecast 2030 zone-to-zone vehicular travel based on population and employment growth described earlier and assuming implementation of the Existing plus Committed roadway network. It is projected that total daily vehicle trip making in Will County would increase by 77 percent. The increase would not be uniform throughout the county. Areas that experience the most population and employment growth would also realize the greatest travel increase. **Figure 6-8** shows the resulting forecast year 2030 estimated ADT and **Figure 6-9** shows the projected change in ADT on Will County highways during the period from 2004–2030.

The largest increase in traffic volumes would occur through the central region of the county, south of I-80, and north of Manhattan–Monee Road. This includes significant trip growth in the area surrounding and leading to the SSA. Another area of high growth is in the northwest corner of the county.

By 2030, existing travel desires have grown due to the increase in population and employment. Prominent travel desires are concentrated in the northern urbanized portions of the county. The primary traffic patterns in the north half of Will County are still north-south in the vicinity of Joliet, Plainfield, Romeoville, Bolingbrook, and Naperville and east-west through the central part of the county including Joliet, Frankfort, and New Lenox. In the southern portions of the county, the predominant travel pattern was north-south in the proximity of the interstate corridors. While this is still a strong pattern, there is substantial expansion of travel desires in the east-west direction across the southern part of the county, and also patterns centered around the SSA. **Figure 6-10** shows a combination of 2004 and 2030 vehicular travel desire bands. Desire bands can be used to provide a graphical description of the pattern of travel growth.

6.5 2030 System Performance

The traffic performance analysis of the future Will County transportation system relied on data described in Section 6-3 of the report related to future travel demand and Existing plus Committed facilities, as well as measures of effectiveness derived from the travel demand model.

6.5.1 Traffic Service Measures

The traffic service measures applied in this analysis, described in Section 5.7.1, include VMT, VHT, and VHD. **Table 6-3** summarizes 2030 traffic service measures separately for all highways and for county roads alone, stratified by functional classification. Similar to existing traffic conditions, principal arterials were found to carry a large percentage of traffic (approximately 30 percent of VMT) and experienced approximately 35 percent of the delay, while making up about 18 percent of lane miles. This trend also appears when only

considering county highways, where principal arterials experience about 44 percent of the total delay on only 27 percent of total lane miles.

TABLE 6-3
2030 Traffic Service

Functional Class	VMT		VHT		VHD	
	Miles	%	Hours	%	Hours	%
2030 All Highways						
Freeways and Ramps	8,442,760	36.1	179,720	29.7	25,290	36.1
Principal Arterials	6,917,530	29.5	190,570	31.5	24,350	34.7
Minor Arterials	3,361,310	14.3	95,940	15.8	12,230	17.5
Collectors	2,546,660	10.9	72,500	12.0	5,510	7.9
Local Roads	2,143,740	9.2	66,990	11.0	2,680	3.8
Totals	23,412,000		605,720		70,060	
2030 County Highways						
Principal Arterials	1,480,720	39.7	39,690	40.0	5,510	43.5
Minor Arterials	1,010,210	27.1	28,720	28.9	4,920	38.9
Collectors	1,025,500	27.4	26,180	26.4	2,020	16.0
Local Roads	216,090	5.8	4,630	4.7	210	1.6
Totals	3,732,520		99,220		12,660	

6.5.2 Congestion Measures

Forecasted 2030 levels of congestion on existing and committed highways based on ADT are shown in [Figure 6-11](#). For the entire system, 24 percent of route miles and 29 percent of lane miles would be congested (Table 6-4). For county roads alone, 42 percent of route miles and 43 percent of lane-miles would be congested. The areas found to be congested in 2004 would remain so in 2030, and in most locations would worsen as a result of the increase in travel

TABLE 6-4
Future Roadway Congestion

Level of Service	Route Miles		Lane Miles	
	Miles	%	Miles	%
2030 All Highways				
Uncongested	1,320	76	2,890	71
Congested	420	24	1,170	29
Total	1,740		4,060	
2030 County Highways				
Uncongested	150	60	310	57
Congested	100	40	230	43
Total	250		540	

demand. In 2004, congestion was restricted to the northern portion of the county. By 2030, with the Existing plus Committed network in place, congestion would intensify in the northern portion of the county and sweep south, surrounding the South Suburban Airport and appearing as far south as Wilmington.

6.5.3 Public Transportation Measures

Effective demand for public transportation services can partly be estimated by the density of residences and employment. This is because efficient public transportation is reliant on the concentration of people and travel destinations (e.g., jobs in the Chicago CBD). Research into the levels of density needed to support different types of public transportation has established minimum residential densities for services such as local buses and commuter rail when connected to the downtown of a major city (Pushkarev and Zupan, 1982).

The projected growth in the county is thus expected to increase demand for public transportation services. Increased demand related to population growth has already affected the commuter rail system, which primarily serves the Chicago CBD, but has had minimal impact on other public transportation services, which focus more on serving trips within the county.

Current estimates suggest that 8 percent of the residents and 14 percent of the employment in the County are within one mile of a Metra station.¹ While growth is expected to occur in these areas, the expectation is that the remainder of the county will grow at a much faster rate. This means that without system expansion, by the year 2030, the proportion of county residents within one mile of a Metra station would be roughly 5 percent, with employment at 8 percent. This trend implies that the Metra system will need to cover more of the county in the future, and that access improvements to the rail stations will need to be addressed.

Table 6-5 shows the projected amount of growth in the Will County communities currently served by Metra, or those communities with planned or proposed Metra service in the future.

Without improvements to the existing system, commuter parking and rail service capacity constraints will continue to impact commuter rail services for Will County residents, particularly on the currently congested RID and Metra/BNSF lines. These issues can be addressed through a variety of improvements, not the least of which is to undertake expansion of the rail system. Other potential initiatives include providing complementary transit services (feeder buses, vanpools) for access to the rail stations, or to ensure development that is compatible with transit usage.

6.6 Conclusions and Comparisons

With the anticipated growth in population and employment within Will County, the transportation network would not be able to accommodate all the growth. Capacity would be reached and exceeded for a larger portion of the County, increasing travel delay and traveler frustration. Further improvements beyond those that are committed are needed to meet the needs of the County in year 2030.

¹ Based on 2004 estimates

TABLE 6-5
Forecasted Residential Growth for Will County Communities Served by Metra

Municipality	Metra Station	2000 Population	Projected Growth (2000–2030)
Lockport	HC	15,191	+21,033
Romeoville	HC (proposed)	21,153	+22,730
Joliet	HC, RID, STAR (proposed)	105,597	+30,928
Elwood	HC (proposed)	1,620	+18,416
Wilmington	HC (proposed)	5,134	+18,199
Mokena	RID, STAR (proposed)	14,583	+12,482
New Lenox	RID, SWS, STAR (proposed)	17,771	+83,954
Manhattan	SWS	3,330	+36,420
Rockdale	RID (proposed)	1,888	-6
Channahon	RID (proposed)	7,235	+22,231
Minooka	RID (proposed)	1,388	+3,984
University Park	MED	6,662	+27,909
Monee	MED (proposed)	2,924	+44,880
Peotone	MED (proposed)	3,385	+12,226
Steger	SES (proposed)	9,682	+2,904
Crete	SES (proposed)	7,346	+31,440
Beecher	SES (proposed)	2,033	+17,996
Frankfort	STAR (proposed)	10,391	+56,827
Plainfield	STAR (proposed)	13,038	+52,706

Source: Northeastern Illinois Planning Commission 2030 Forecasts

Table 6-6 shows the change in VMT, VHT, and VHD between 2003 and 2030 stratified by functional classification. For county highways, VMT and VHT would approximately double between 2004 and 2030. In addition, VHD would increase almost seven times over 2004 levels by the year 2030 as a result of increased congestion. For all highways, VMT and VHT almost double, and VHD would increase to nearly five times 2004 levels. This dramatic deterioration of traffic performance indicates that existing and committed facilities alone would not adequately handle future travel demand.

The number of route miles and lane miles that are congested would more than double by the year 2030 (**Table 6-7**). In the year 2004, nearly all the roadways (91 percent of the lane miles) were uncongested; however, this would decrease to only 71 percent in the year 2030. For the county highways, the percentage of uncongested lane miles would decrease from 87 percent to 57 percent (**Tables 5-9** and **6-4**).

TABLE 6-6
Comparison of Traffic Performance

Functional Class	VMT		VHT		VHD	
	Δ Miles	Δ %	Δ Hours	Δ %	Δ Hours	Δ %
2004–2030 All Highways						
Freeways and Ramps	3,652,660	76.3	77,460	75.7	21,920	650.4
Principal Arterials	3,025,940	77.8	88,390	86.5	17,870	275.8
Minor Arterials	1,492,470	79.9	47,930	99.8	11,020	910.7
Collectors	1,362,040	115.0	39,910	122.5	4,980	939.6
Locals	1,500,430	233.2	47,910	251.1	2,570	2,336.4
Totals	11,033,540	89.1	301,600	99.2	58,360	498.8
2004–2030 County Highways						
Principal Arterials	736,730	99.0	21,250	115.2	4,580	492.5
Minor Arterials	507,670	101.0	16,660	138.1	4,500	1071.4
Collectors	606,230	144.6	16,220	162.9	1,870	1,246.7
Locals	116,360	116.7	2,510	118.4	200	2,000.0
Totals	1,966,990	111.4	56,640	133.0	11,050	738.4

TABLE 6-7
Comparison of Congestion

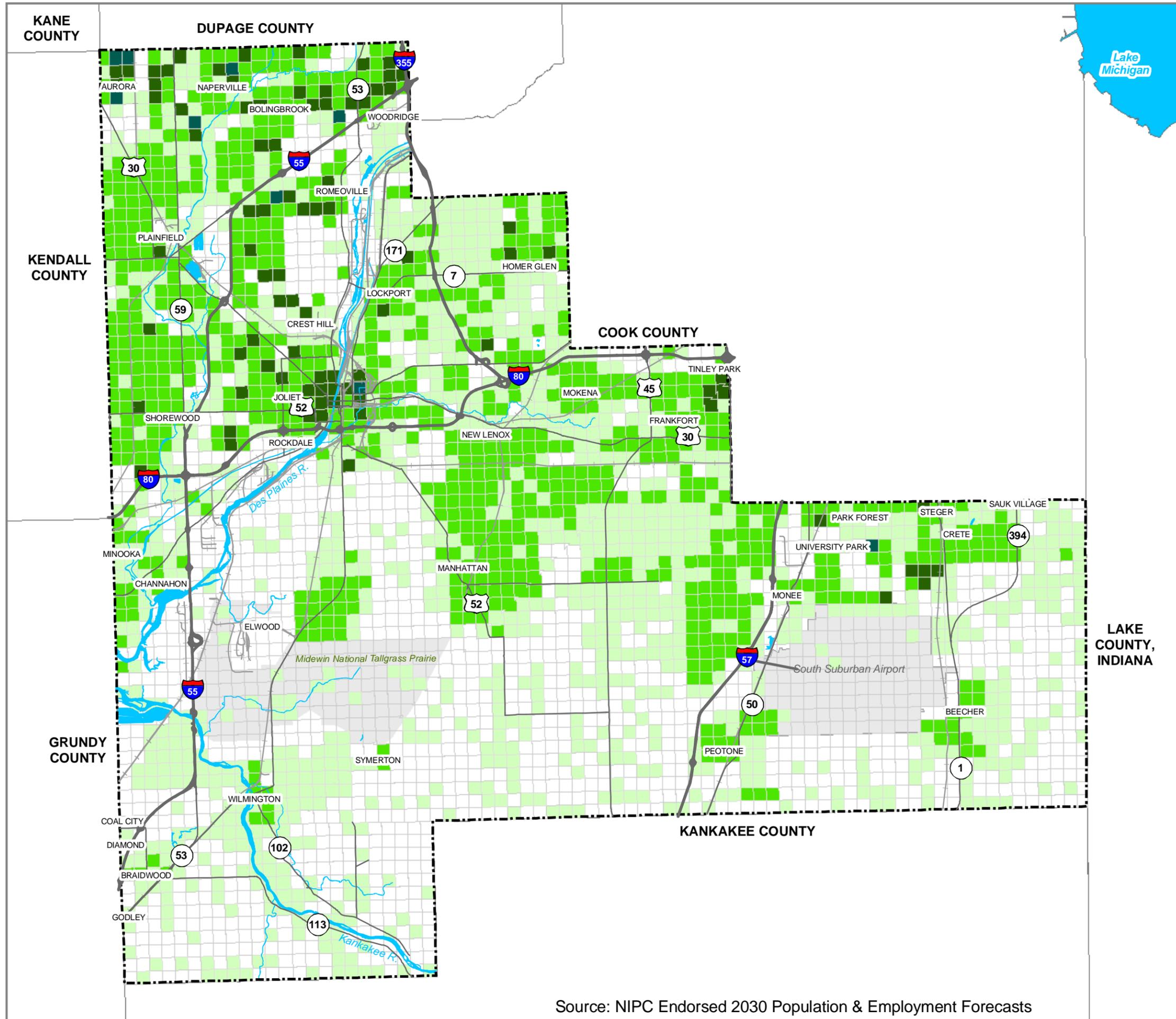
Level of Service	Route Miles		Lane Miles	
	Δ Miles	Δ %	Δ Miles	Δ %
2004–2030, All Highways				
Uncongested	-330	-20	-810	-22
Congested	290	223	810	225
2004–2030 County Highways				
Uncongested	-80	-35	-170	-35
Congested	70	233	160	228

SECTION 6

Figures

Figure 6-1
Forecast 2030 Population Density

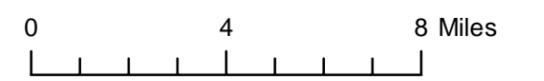
WILL COUNTY
2030 TRANSPORTATION PLAN



Legend

Population Density
(persons per quartersection)

- < 25
- 25 - 500
- 500 - 1500
- 1500 - 2500
- > 2500



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Source: NIPC Endorsed 2030 Population & Employment Forecasts

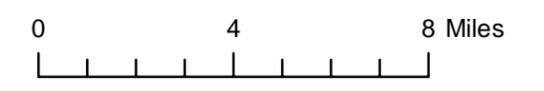
Figure 6-2
Forecast Change in Population
2004 - 2030

WILL COUNTY
2030 TRANSPORTATION PLAN

Legend

Population Growth

-  No Increase in Population
-  1 - 100 People Gained
-  100 - 500 People Gained
-  More than 500 People Gained



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Source: NIPC Endorsed 2030 Population & Employment Forecasts

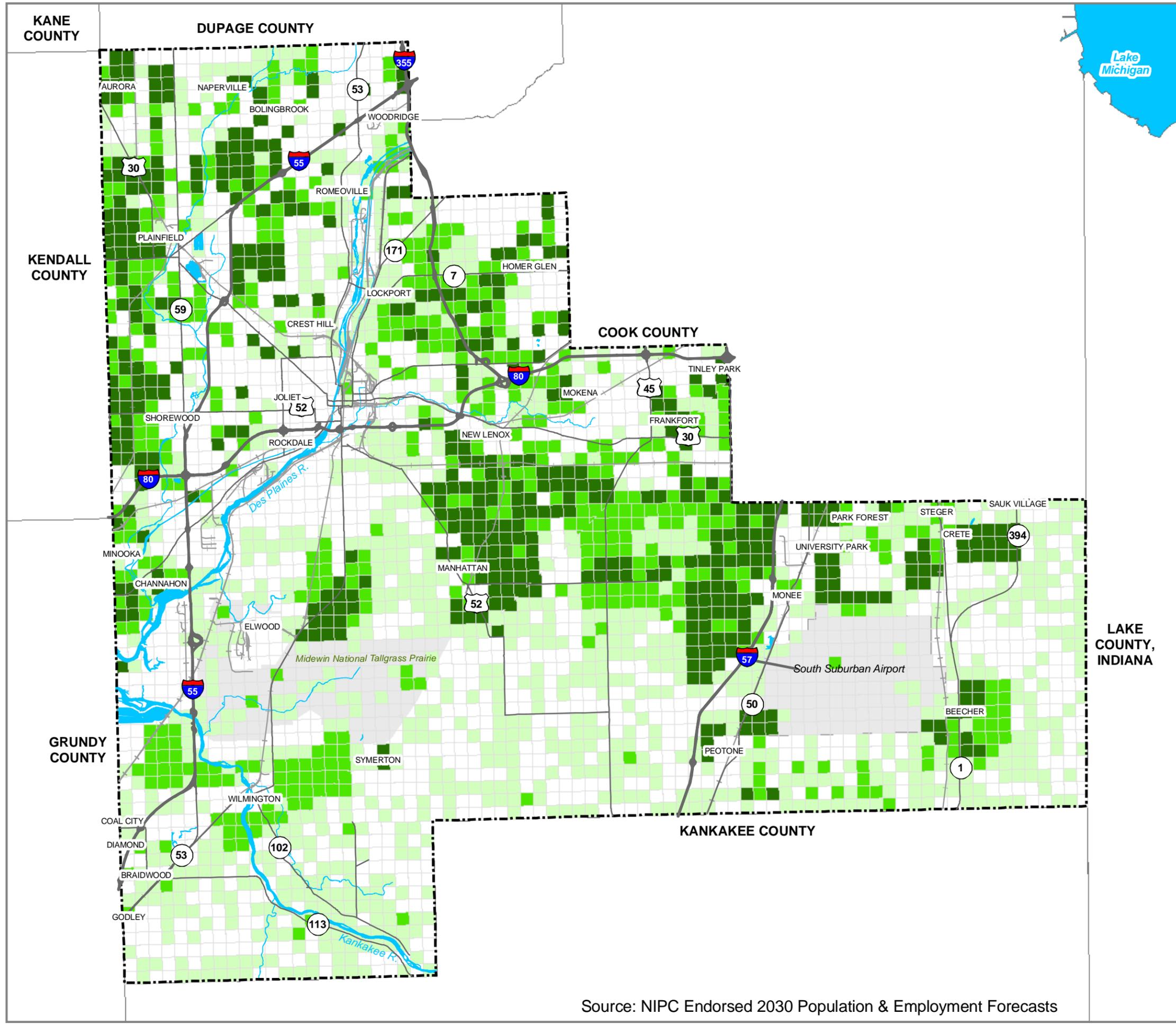


Figure 6-3
Forecast 2030 Employment Density

WILL COUNTY
2030 TRANSPORTATION PLAN

Legend

Employment Density
(persons per quartersection)

-  < 25
-  25 - 500
-  500 - 1500
-  1500 - 2500
-  > 2500

0 4 8 Miles



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Source: NIPC Endorsed 2030 Population & Employment Forecasts

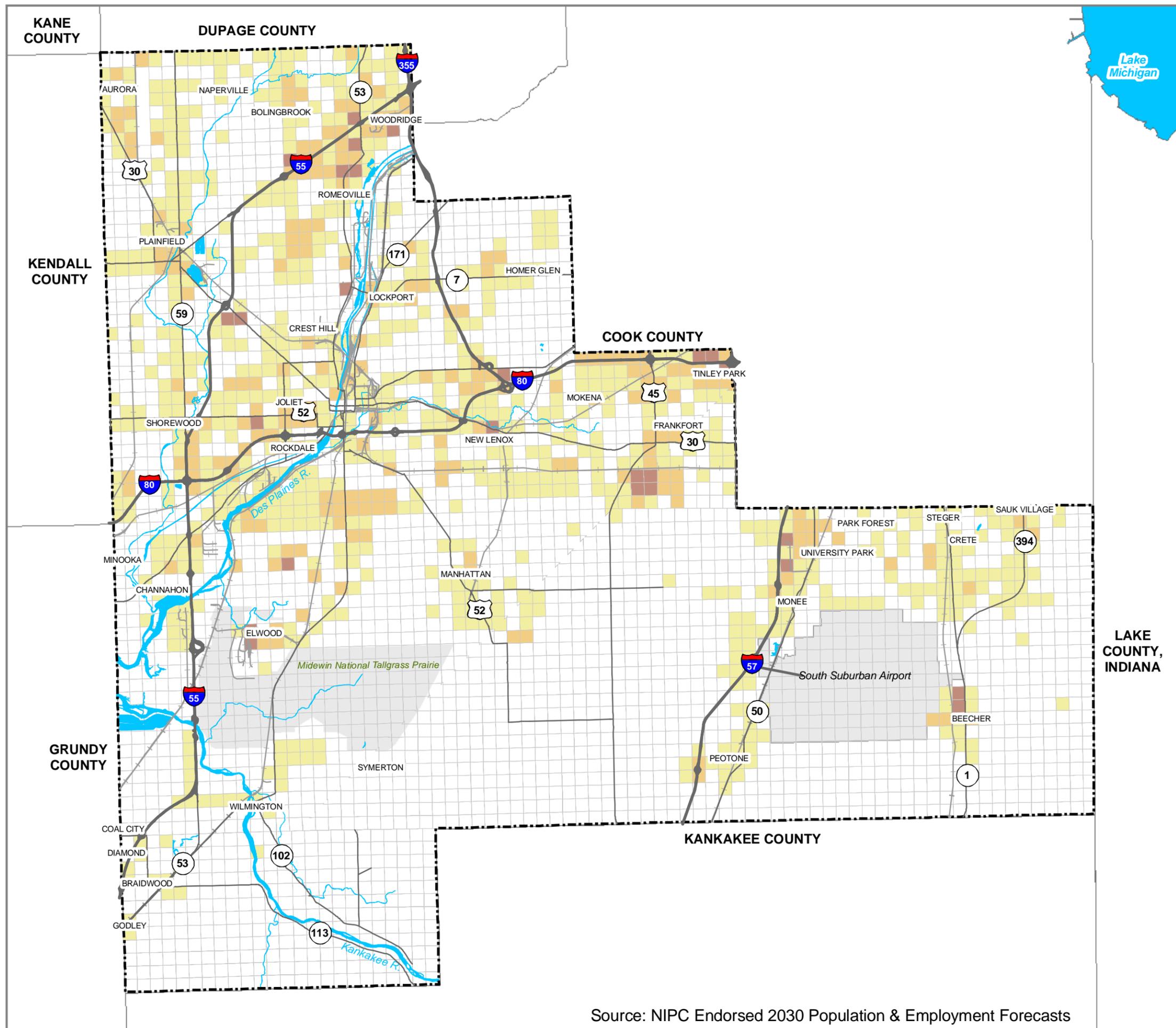


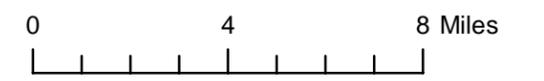
Figure 6-4
Forecast Change in Employment
2004 - 2030

WILL COUNTY
2030 TRANSPORTATION PLAN

Legend

Employment Growth (Jobs)

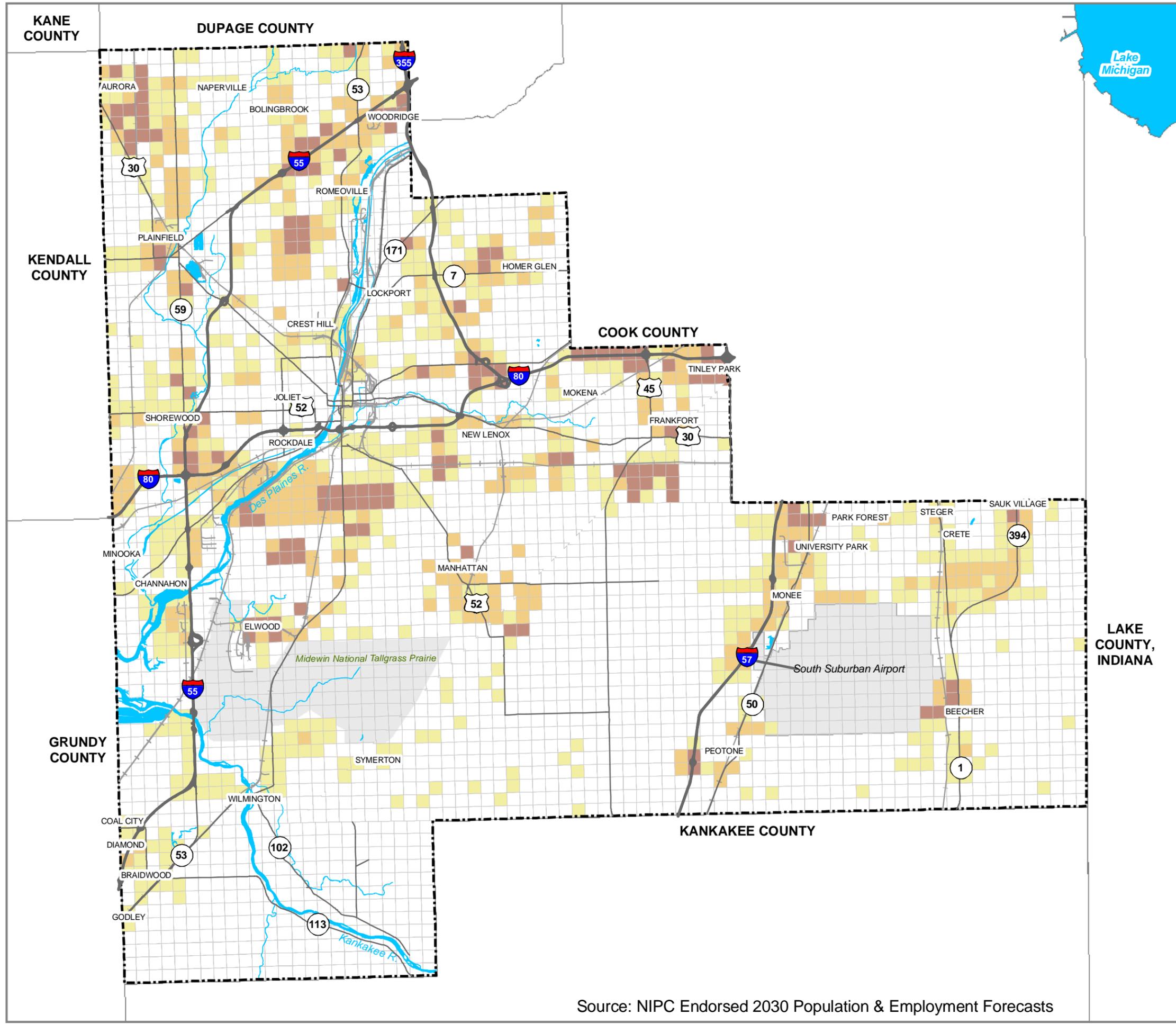
- No Increase in Employment
- 1 - 100 Jobs Gained
- 100 - 500 Jobs Gained
- More than 500 Jobs Gained



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Source: NIPC Endorsed 2030 Population & Employment Forecasts



**Figure 6-6
Action Oriented Employment Change
From NIPC 2030 Projections**

**WILL COUNTY
2030 TRANSPORTATION PLAN**

Legend

-  Increase in Employment
-  Decrease in Employment
-  No Change in Buffer Zone Employment
-  Increase in Buffer Zone Employment
-  Decrease in Employment Trips

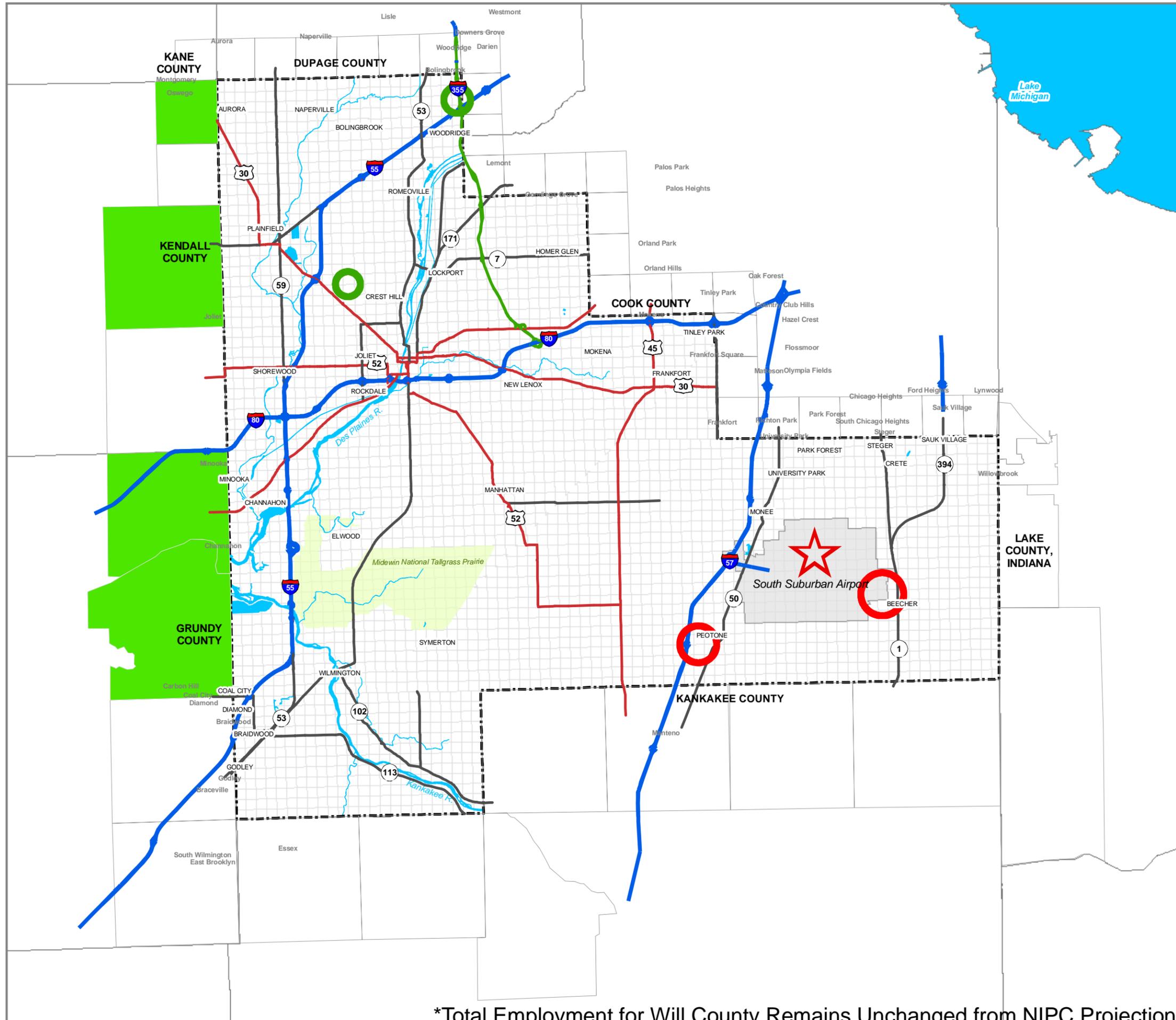
0 4 8 Miles



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***Total Employment for Will County Remains Unchanged from NIPC Projections**

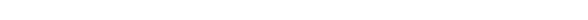


**Figure 6-7
Committed Projects**

To Be Constructed After 2004 Baseline

**WILL COUNTY
2030 TRANSPORTATION PLAN**

Legend

-  Metra Station - Under Construction
-  Metra Commuter Rail Station
-  Metra Commuter Rail Service
-  Committed Metra Commuter Rail Service
-  Committed Roadway Project



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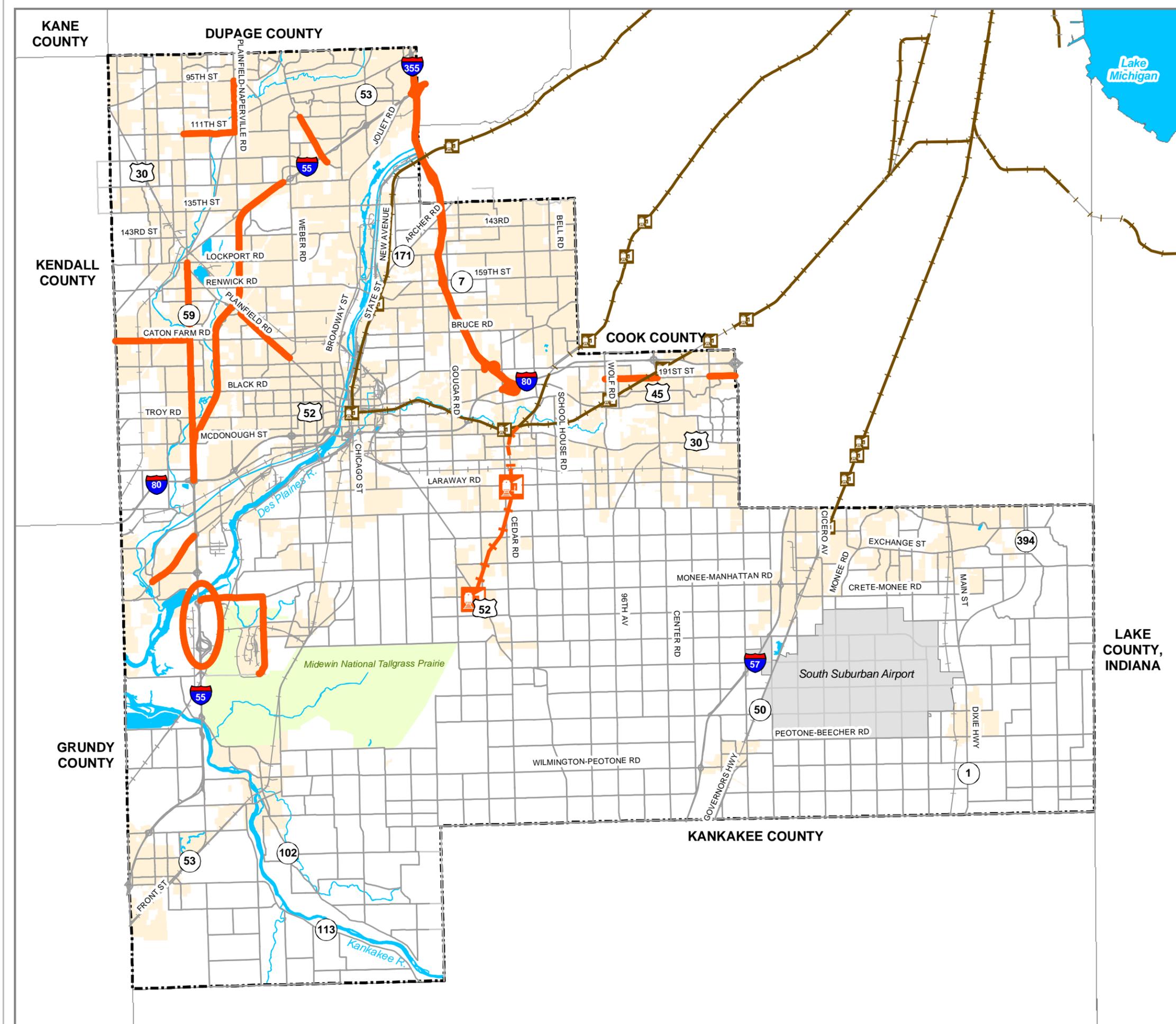
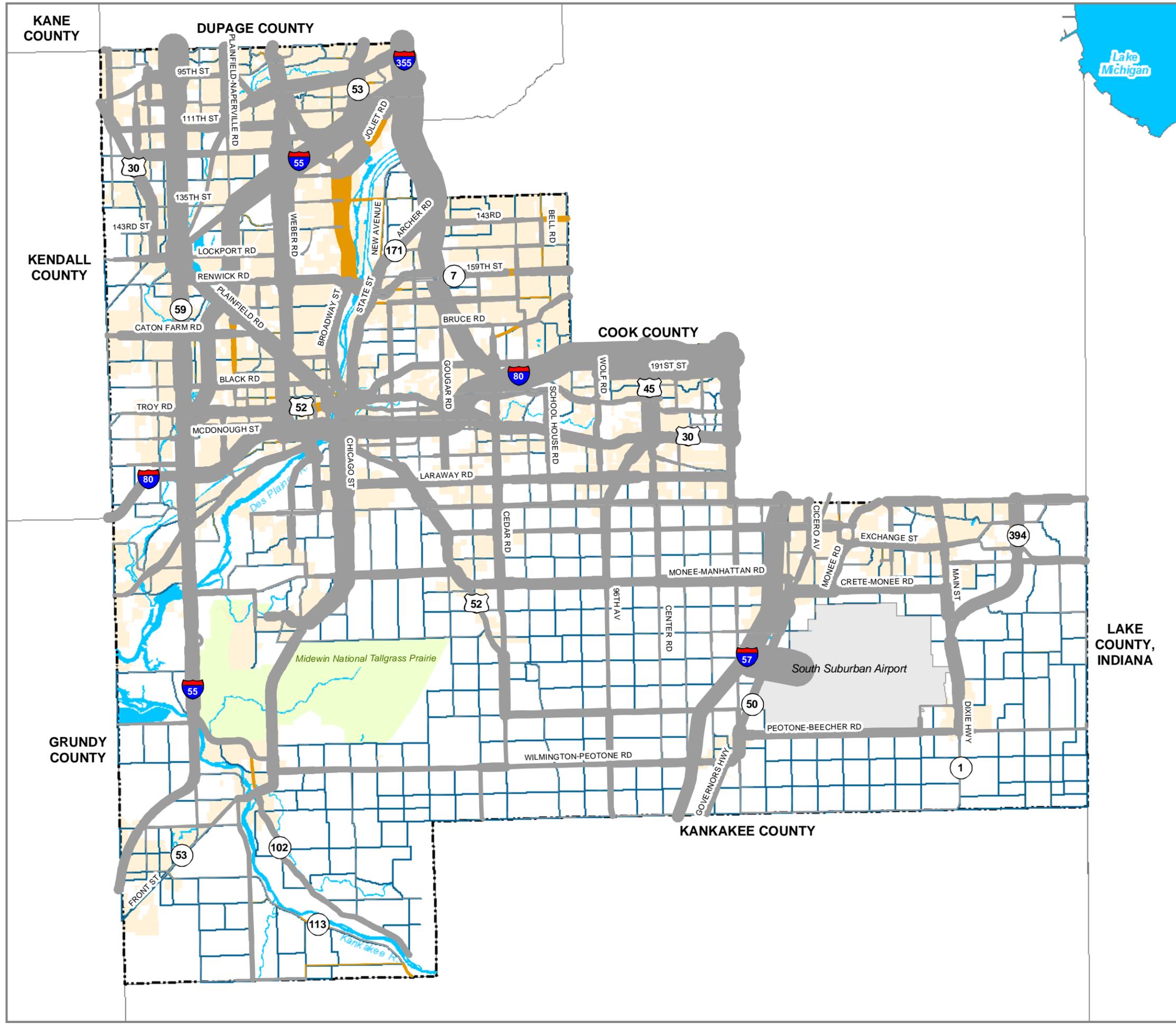


Figure 6-9
Projected Change in
Average Daily Traffic 2004 - 2030
WILL COUNTY
2030 TRANSPORTATION PLAN



Legend

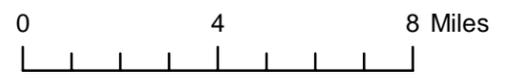
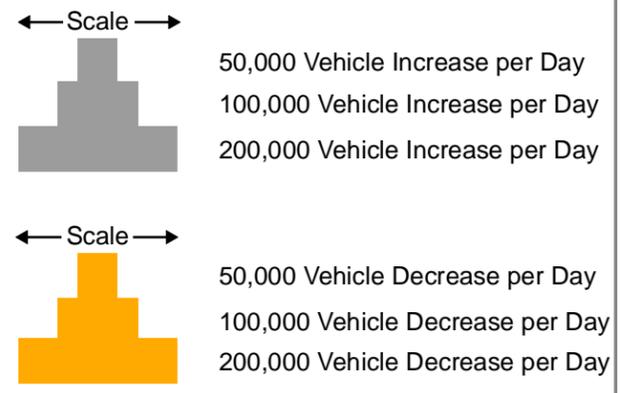


Figure 6-10
Growth in Travel Desires
2004-2030

WILL COUNTY
2030 TRANSPORTATION PLAN

Legend

 Township Boundaries

← Scale →

 50,000 Vehicles per Day
 100,000 Vehicles per Day
 200,000 Vehicles per Day

2030 Trips

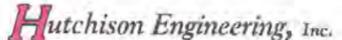
← Scale →

 50,000 Vehicles per Day
 100,000 Vehicles per Day
 200,000 Vehicles per Day

2004 Trips

0 4 8 Miles



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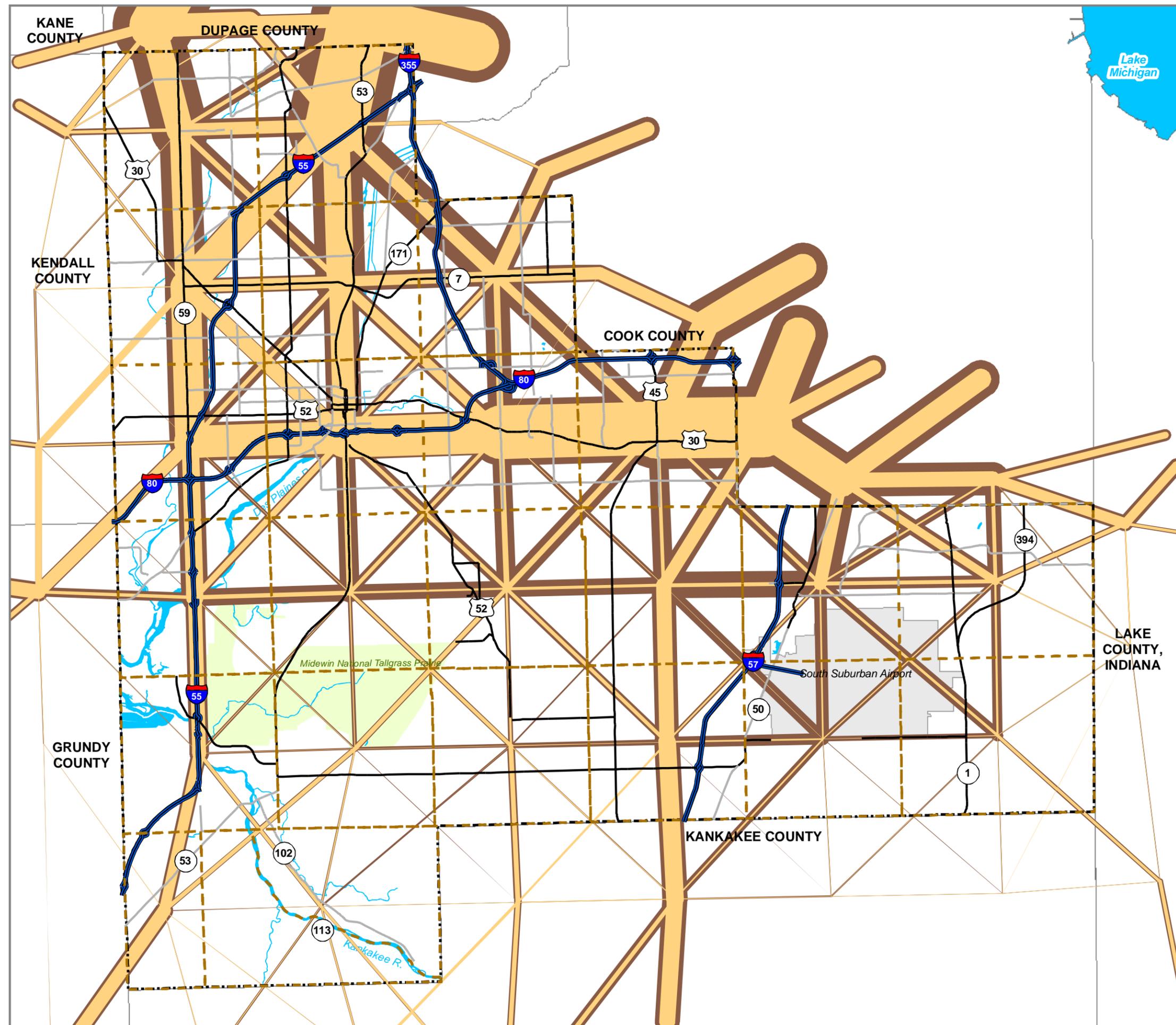
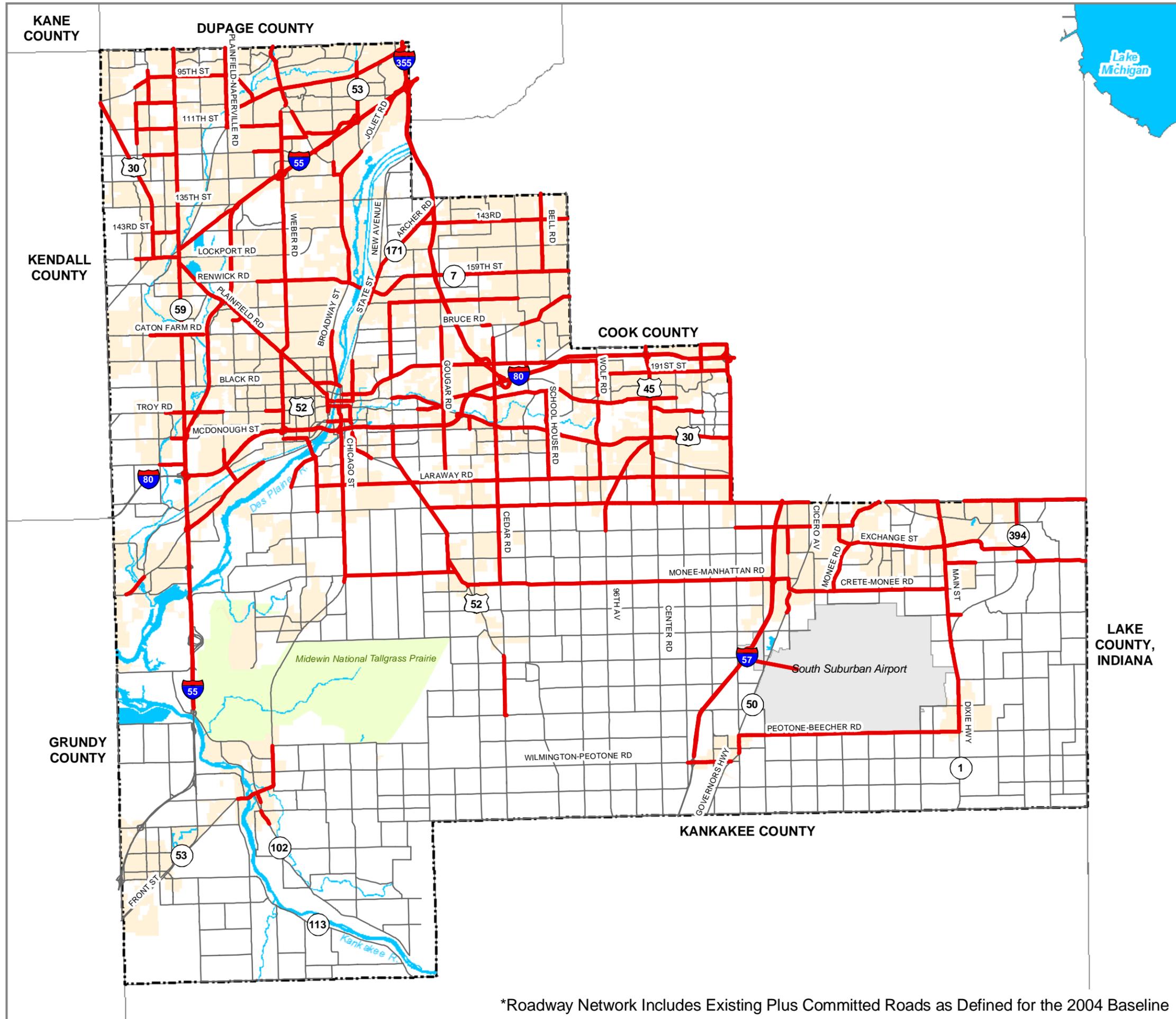
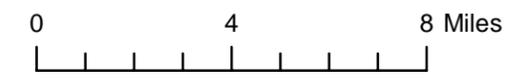


Figure 6-11
2030 Congested Roadway Segments
 Based on Average Daily Traffic
WILL COUNTY
 2030 TRANSPORTATION PLAN



Legend

 Congested Roadway*



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*Roadway Network Includes Existing Plus Committed Roads as Defined for the 2004 Baseline