



To: Lee Ann Prather, Janel Veile, Adam Gabany, and Michael Vanderhoof (IDOT)
From: Alta Planning + Design
Date: June 15th, 2023
Re: Illinois Active Transportation Plan – Equity Analysis

Introduction

This memo provides an overview of Alta Planning + Design’s technical assessment of equity need in the State of Illinois. The memo outlines the approach to analyzing equity in the state, illustrates the results found based on the equity indicators, and highlights the areas of transportation need in each IDOT district. The methodology used in the memo was informed by knowledge of available national and state-level data from the State of Illinois and conversations with IDOT staff.

Without access to transportation, people in Illinois will have a harder time getting to work, accessing everyday shopping and services, seeing a doctor, going to school, or connecting with others. While all communities offer a variety of ways to get around, not everyone has equal access to a wide range of convenient, safe, and affordable means of transportation. Many communities rely on multiple modes to connect to basic services that are necessary to live productive, fulfilling, and healthy lives. However, these transportation options are not always available to those who need them most. Completion of an equity analysis recognizes that barriers to securing transportation needs may vary among population subsets and that locating concentrations of disadvantaged portions of the population can be the first step in identifying and prioritizing those needs. This analysis identifies concentrations of Illinois residents that are considered vulnerable to unsafe, disconnected, or incomplete active transportation networks.

Equity Indicators

The completion of the equity analysis recognizes that barriers to securing active transportation needs vary among population demographics and locates concentrations of disadvantaged populations within Illinois in order to identify and later prioritize those needs. Table 1 on the following page lists the equity indicators that were used to complete Illinois’ equity analysis, their rationale for inclusion, and the weight of each indicator.

Table 1. Definitions and Rationale for Data Used in the Illinois' Equity Analysis

Data Measure	Definition	Rationale	Source	Weight
Economic Opportunity	The percentage of people who grew up in a given census tract who, 30 years later, don't live in a wealthy census tract	Providing efficient active transportation infrastructure in disadvantaged communities can help to improve socioeconomic factors where challenges of accessing job opportunities and basic needs exist.	Opportunity Atlas	10%
Access to a Vehicle	The percentage of households without access to a vehicle	People without access to a vehicle are more reliant on active transportation infrastructure and may travel by foot, bicycle, and public transportation.	ACS 5-year	15%
Air Quality	The quantity of particulate matter (PM2.5) in the air	Improved active transportation infrastructure can lead to a shift to active modes of transportation which can help to lower Carbon Dioxide (CO2) emissions into the air.	EJ Screen	10%
Housing Cost Burden	The cost of rent and mortgage payments as a percent of income	Improving active transportation connectivity can help to lower household transportation costs by providing other modes of transportation.	ACS 5-year	5%
Race	The percentage of the population that identifies as non-white and/or Hispanic/Latino	Improving active transportation infrastructure can help to improve accessibility for all ages, abilities, and backgrounds.	ACS 5-year	20%
Income	The percentage of households making less than 200% of the Federal Poverty Level, which is a threshold set by the U.S. Census Bureau and updated annually.	Active transportation provides an alternative mode of transportation for those facing challenges of vehicle affordability.	ACS 5-year	25%
Educational Attainment	The percentage of the population over 25 years of age with educational attainment at or less than a high school diploma or equivalent.	Active transportation provides additional modes of transportation that can improve accessibility and connectivity to job opportunities.	ACS 5-year	10%
Youth & Seniors	The percentage of the population under the age of 18 and over the age of 65	Improving active transportation infrastructure can improve accessibility for those who are unable to operate or do not own a vehicle.	ACS 5-year	5%

The project team compiled these variables, percentile ranked¹ them relative to the study region (Illinois) and assigned a respective weight to each variable. See Table 1 for weights. These variables were then combined into a weighted sum. Once the index was calculated, a map of the results was generated by categorizing all the census block groups into five bins that indicate how high they score on the index.² Higher scores indicate areas of higher equity need.

On the maps that follow, the data is displayed in hexagons that were sized to correspond to census tracts. Proportional allocation was used to correctly assign values where the hexagon crossed one or more census boundaries. The use of the hexagons decreases the “boundary effect” which can occur when geographic analyses are too influenced by geographic boundaries that are not necessarily related to the underlying data

Results by Indicator

Identification of equity priority areas are determined based on the composite equity score. For the purposes of this plan, block groups with a composite score in the top quintile (top 20%) is considered an area of highest need. The composite scores are shown on the following page. Maps with the geographic distribution for each indicator are included in Appendix I.

Economic Opportunity

The highest concentrations of people living in disadvantage communities include the following areas:

District 1			
Chicago			
District 2			
Beloit	Davenport	Freeport	Rockford
Sterling			
District 3			
Hoopeston	Kankakee		
District 4			
Bushnell	Galesburg	Havana	Macomb
Monmouth	Peoria		
District 5			
Champaign	Danville	Hoopeston	Paris

¹ Percentile ranking is a way to evaluate the relative standing of a value within a data set. A percentile rank is the percent of scores in the distribution that are less than it. For example, if Block Group A receives a 0.65 percentile rank for total population, that means that out of all the census block groups in the study area, 65% of them have a smaller total population than Census Block A.

² The census block groups are categorized using quintiles, which means that the distribution of their index scores is broken out into five bins comprised of an equal number of census block groups in each bin.

District 6			
Beardstown	Gillespie	Havana	Jacksonville
Litchfield	Mount Sterling	Pana	Pittsfield
Rushville	Springfield	Staunton	Vandalia
District 7			
Carmi	Casey	Decatur	Fairfield
Flora	Lawrenceville	Mattoon	McLeansboro
Olney	Robinson	Vandalia	
District 8			
Alton	Centralia	Salem	St. Louis
White Hall			
District 9			
Anna	Benton	Cairo	Cape Girardeau
Carbondale	Carmi	Christopher	Du Quoin
Eldorado	Harrisburg	Johnston City	McLeansboro
Metropolis	Mount Vernon	Murphysboro	Paducah
Pinckneyville	West Frankfort		

Access to Vehicle

The highest concentrations of people without access to a vehicle include the following areas:

District 1			
Beecher	Braidwood--Coal City--Wilmington	Chicago	DeKalb
Genoa	Hampshire	Harvard	Kankakee
Kenosha	Marengo	Momence	Peotone
Rockford	Round Lake Beach--McHenry--Grayslake	Wonder Lake	Woodstock
District 2			
Beloit	Byron	Clinton	Davenport
Davis Junction	Dixon	Dubuque	Freeport
Galena	Geneseo	Genoa	Kewanee
Lena	Mendota	Morrison	Mount Morris
Oregon	Rochelle	Rockford	Savanna
Sterling			
District 3			
Braidwood--Coal City--Wilmington	Chicago	DeKalb	Dwight
El Paso	Fairbury	Genoa	Gibson City
Gilman	Hoopeston	Kankakee	Lake Holiday
Marseilles	Mendota	Momence	Morris
Ottawa	Paxton	Peru--LaSalle	Pontiac
Princeton	Streator	Watseka	
District 4			
Abingdon	Aledo	Bloomington--Normal	Burlington
Bushnell	Canton	Carthage	El Paso
Elmwood	Eureka	Galesburg	Havana
Lincoln	Mackinaw	Macomb	Metamora
Monmouth	Peoria		
District 5			
Arcola	Bloomington--Normal	Champaign	Charleston
Clinton	Danville	Decatur	Downs
Heyworth	Hoopeston	Le Roy	Mahomet
Marshall	Monticello	Paris	Rantoul
St. Joseph	Tuscola		
District 6			
Alton	Auburn	Beardstown	Carlinville
Carthage	Decatur	Fort Madison	Gillespie
Havana	Hillsboro	Holiday Shores	Jacksonville

Keokuk	Lincoln	Litchfield	Mount Sterling
Nokomis	Pana	Pawnee	Petersburg
Pittsfield	Quincy	Rushville	Springfield
Staunton	Taylorville	Vandalia	Virden
White Hall			
District 7			
Carlyle	Carmi	Casey	Centralia
Charleston	Decatur	Effingham	Fairfield
Flora	Greenville	Lawrenceville	Marshall
Mattoon	McLeansboro	Mount Carmel	Newton
Olney	Robinson	Shelbyville	Sullivan
Vandalia			
District 8			
Alton	Breese	Carlyle	Centralia
Chester	Greenville	Highland	Holiday Shores
Jerseyville	Mascoutah	Millstadt	Nashville
New Baden	Red Bud	Salem	Smithton
Sparta	St. Louis	Staunton	Steeleville
Trenton	Waterloo	White Hall	
District 9			
Anna	Benton	Cairo	Cape Girardeau
Carbondale	Carmi	Christopher	Du Quoin
Eldorado	Harrisburg	Johnston City	McLeansboro
Metropolis	Mount Vernon	Murphysboro	Paducah
Pinckneyville	West Frankfort		

**Air Quality**

The highest concentrations of particle matter (PM2.5) in the air include the following areas:

District 1			
Chicago	Harvard	Round Lake Beach-- McHenry--Grayslake	
District 2			
Davenport	Freeport	Kewanee	Rockford
Sterling			
District 3			
DeKalb	Kankakee	Peru--LaSalle	
District 4			
Galesburg	Monmouth	Peoria	Galesburg
District 5			
Bloomington--Normal	Danville	Champaign	Rantoul
District 6			
Beardstown	Jacksonville	Quincy	Springfield
District 7			
Decatur			
District 8			
Alton	Centralia	Chester	St. Louis
District 9			
Benton	Cairo	Carbondale	Du Quoin
Harrisburg	Metropolis	Mount Vernon	Murphysboro
West Frankfort			

Housing Cost Burden

The highest concentrations of cost-burdened households include the following areas:

District 1			
Braidwood--Coal City-- Wilmington	Chicago	Hampshire	Harvard
Round Lake Beach-- McHenry--Grayslake			
District 2			
Beloit	Davenport	Dixon	Freeport
Geneseo	Kewanee	Lena	Morrison
Oregon	Rockford	Savanna	Sterling
District 3			
Chicago	DeKalb	Kankakee	Marseilles
Momence	Ottawa	Paxton	Peru--LaSalle
Pontiac	Princeton	Streator	Watseka
District 4			
Abingdon	Bushnell	Canton	Eureka
Galesburg	Macomb	Metamora	Monmouth
District 5			
Champaign	Danville	Monticello	Paris
Rantoul	Tuscola		
District 6			
Carthage	Gillespie	Hillsboro	Jacksonville
Keokuk	Lincoln	Litchfield	Petersburg
Quincy	Springfield	Staunton	Taylorville
District 7			
Carlyle	Charleston	Decatur	Greenville
Mattoon	Mount Carmel	Newton	Olney
Robinson	Sullivan	Vandalia	
District 8			
Alton	Breese	Centralia	Greenville
Jerseyville	Red Bud	Salem	St. Louis
District 9			
Benton	Cairo	Carbondale	Carmi
Christopher	Eldorado	Harrisburg	Johnston City
Metropolis	Mount Vernon	Murphysboro	Pinckneyville
West Frankfort			

Race

The highest concentrations of people of color include the following areas:

District 1			
Chicago	Round Lake Beach-- McHenry--Grayslake		
District 2			
Davenport	Freeport	Rockford	
District 3			
DeKalb	Kankakee		
District 4			
Peoria			
District 5			
Champaign	Danville		
District 6			
Springfield			
District 7			
Decatur			
District 8			
Alton	St. Louis		
District 9			
Cairo	Carbondale		

Income:

The highest concentrations of people that are 200% below the poverty level include the following areas:

District 1			
Braidwood--Coal City-- Wilmington	Chicago	Harvard	Marengo
Round Lake Beach-- McHenry--Grayslake	Woodstock		
District 2			
Beloit	Davenport	Dixon	Freeport
Geneseo	Kewanee	Morrison	Mount Morris
Oregon	Rochelle	Rockford	Savanna
Sterling			
District 3			
DeKalb	Gilman	Hoopeston	Kankakee
Momence	Ottawa	Peru--LaSalle	Pontiac
Streator	Watseka		
District 4			
Abingdon	Bushnell	Canton	Galesburg
Havana	Macomb	Monmouth	Peoria
District 5			
Bloomington--Normal	Champaign	Danville	Mahomet
Paris	Rantoul		
District 6			
Beardstown	Carlinville	Gillespie	Havana
Hillsboro	Jacksonville	Lincoln	Litchfield
Mount Sterling	Pana	Pittsfield	Rushville
Springfield	Taylorville		
District 7			
Charleston	Decatur	Effingham	Fairfield
Flora	Lawrenceville	Marshall	Mattoon
Mount Carmel	Newton	Olney	Robinson
Shelbyville	Sullivan	Sullivan	Vandalia
District 8			
Alton	Centralia	Chester	Greenville
Jerseyville	New Baden	Salem	Sparta
St. Louis	Steeleville	White Hall	
District 9			
Anna	Benton	Cairo	Cape Girardeau
Carbondale	Christopher	Du Quoin	Eldorado

District 9 (continued)			
Harrisburg	Johnston City	Metropolis	Mount Vernon
Murphysboro	Pinckneyville	West Frankfort	

Education Attainment

The highest concentrations of people with no high school diploma include the following areas:

District 1			
Braidwood--Coal City-- Wilmington	Chicago	Harvard	Momence
Round Lake Beach-- McHenry--Grayslake	Woodstock		
District 2			
Beloit	Davenport	Dubuque	Freeport
Kewanee	Rockford	Rochelle	Sterling
District 3			
DeKalb	Dwight	Fairbury	Gilman
Hoopeston	Kankakee	Marseilles	Mendota
Momence	Ottawa	Peru--LaSalle	Pontiac
Princeton	Streator	Watseka	
District 4			
Abingdon	Canton	Galesburg	Havana
Peoria			
District 5			
Arcola	Bloomington--Normal	Champaign	Clinton
Danville	Hoopeston	Rantoul	
District 6			
Beardstown	Gillespie	Havana	Hillsboro
Jacksonville	Litchfield	Mount Sterling	Nokomis
Pana	Pittsfield	Quincy	Springfield
Staunton	Taylorville	Vandalia	White Hall
District 7			
Decatur	Flora	Lawrenceville	Mattoon
Olney	Shelbyville	Sullivan	Vandalia
District 8			
Alton	Centralia	Chester	Salem
Sparta	St. Louis	White Hall	

District 9			
Cairo	Cape Girardeau	Carbondale	Carmi
Metropolis	Mount Vernon	Murphysboro	Pinckneyville
West Frankfort			

Youth & Seniors

The highest concentrations of children and seniors include the following areas:

District 1			
Chicago	Hampshire	Kankakee	Round Lake Beach-- McHenry--Grayslake
Woodstock			
District 2			
Beloit	Clinton	Davenport	Davis Junction
Dixon	Dubuque	Freeport	Kewanee
Lena	Mendota	Morrison	Mount Morris
Oregon	Rochelle	Rockford	Savanna
Sterling			
District 3			
Chicago	DeKalb	Dwight	El Paso
Fairbury	Gibson City	Gilman	Hoopeston
Kankakee	Marseilles	Mendota	Momence
Morris	Ottawa	Paxton	Peru--LaSalle
Pontiac	Princeton	Streator	Watseka
District 4			
Abingdon	Aledo	Bloomington--Normal	Bushnell
Canton	Eureka	Galesburg	Havana
Macomb	Metamora	Monmouth	Peoria
District 5			
Arcola	Bloomington--Normal	Champaign	Clinton
Danville	Hoopeston	Le Roy	Mahomet
Monticello	Paris	Rantoul	
District 6			
Beardstown	Carlinville	Carthage	Fort Madison
Gillespie	Havana	Hillsboro	Jacksonville
Keokuk	Lincoln	Litchfield	Mount Sterling
Nokomis	Pana	Pittsfield	Quincy
Rushville	Springfield	Staunton	Taylorville
District 7			
Carlyle	Casey	Charleston	Decatur

District 7 (continued)			
Effingham	Flora	Lawrenceville	Marshall
Mattoon	McLeansboro	Mount Carmel	Newton
Olney	Robinson	Shelbyville	Sullivan
Vandalia	Greenville	Highland	Holiday Shores
Jerseyville	Nashville	Red Bud	Salem
Sparta	St. Louis	Steeleville	White Hall
District 8			
Alton	Breese	Carlyle	Centralia
Chester			
District 9			
Anna	Benton	Cairo	Carbondale
Carmi	Christopher	Du Quoin	Harrisburg
Johnston City	McLeansboro	Metropolis	Mount Vernon
Murphysboro	Pinckneyville	West Frankfort	

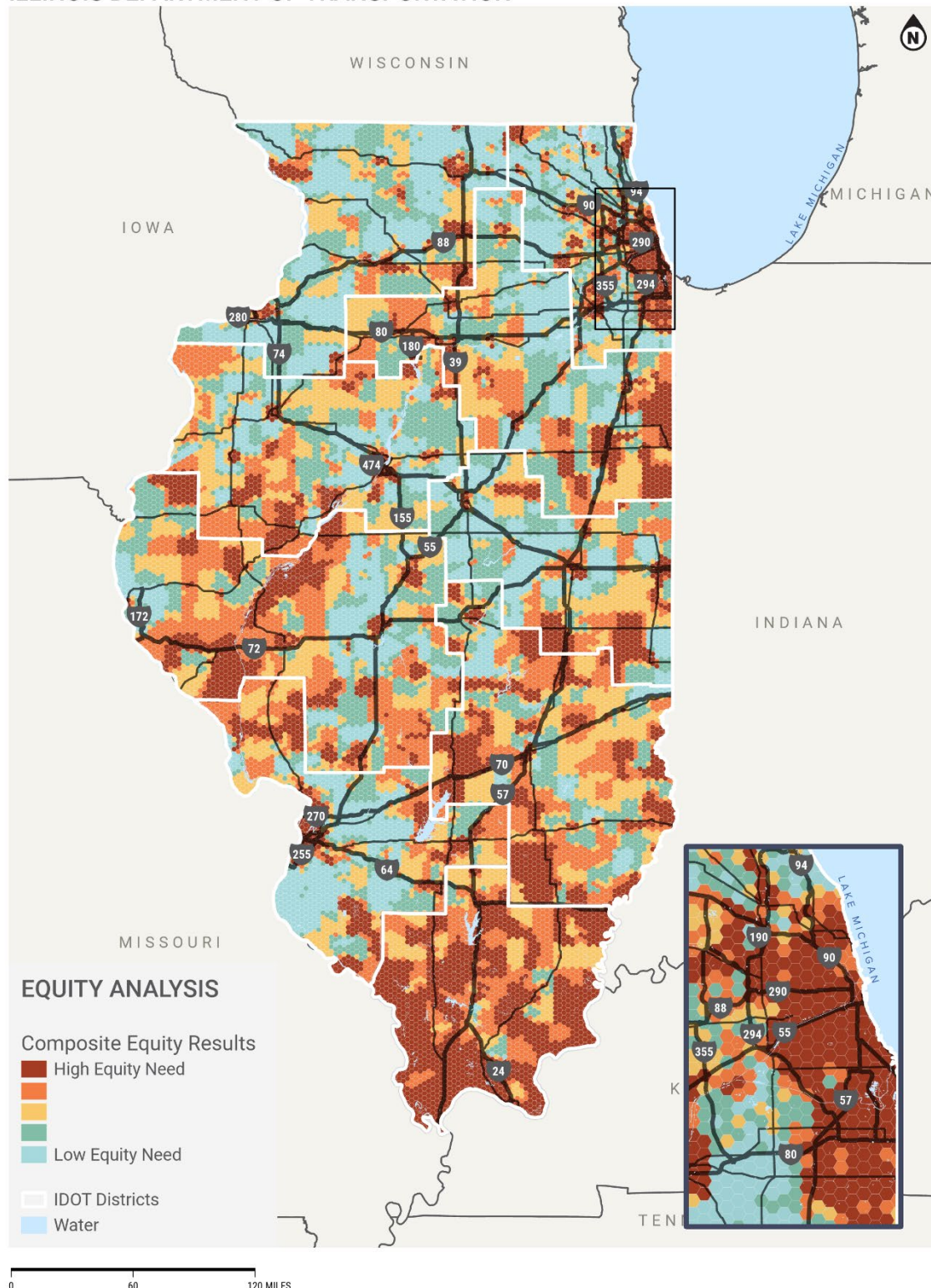
Statewide Equity Assessment

Table 2 summarizes the estimated population for the areas within the highest quintile of transportation equity need. This analysis was done with population data from the American Community Survey by block group.

Table 2: Population within the highest equity quintile

District	Population
1	1,929,354
2	70,588
3	15,604
4	38,969
5	38,142
6	30,383
7	25,404
8	65,624
9	28,381
TOTAL	2,242,449

ILLINOIS DEPARTMENT OF TRANSPORTATION

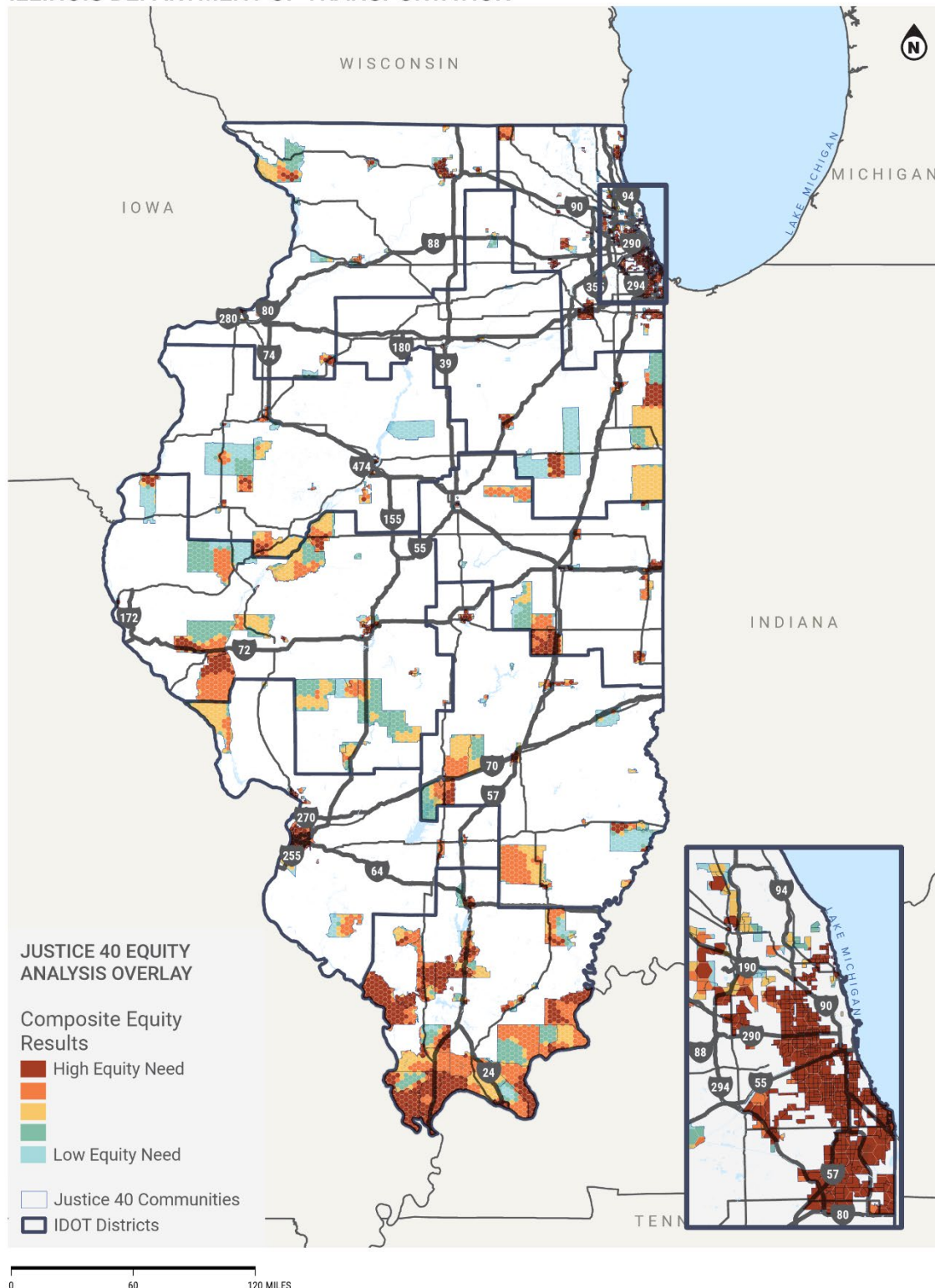


Justice40 Areas

Justice40 is an initiative from the Biden-Harris administration to invest in historically disadvantaged communities. The Justice40 initiative states that federal programs must allocate 40% of benefits to underserved communities and communities that have been overburdened by climate change, pollution, and environmental hazards. The U.S. Department of Transportation will use the Justice40 initiative to intentionally address gaps in transportation infrastructure and services. Justice40 also renews USDOT’s commitment to ensure projects have meaningfully engaged with community leaders and to consider negative impacts from transportation projects. The first iteration of the climate and economic justice screening tool was released in February 2022 to identify Justice40 communities, and USDOT will be incorporating this methodology into future project funding cycles. Illinois has 1,115 census tracts designated as Justice40 areas. The map below displays the overlap between the Alta equity analysis and the Justice40 designated census tracts. Special consideration for federal grant funding opportunities should be given for areas with overlapping high transportation needs and the Justice40 designation. The Justice40 initiative considers multiple dimensions of need (shown below), and is used by various government agencies, which is why the results differ from the transportation equity analysis.



ILLINOIS DEPARTMENT OF TRANSPORTATION

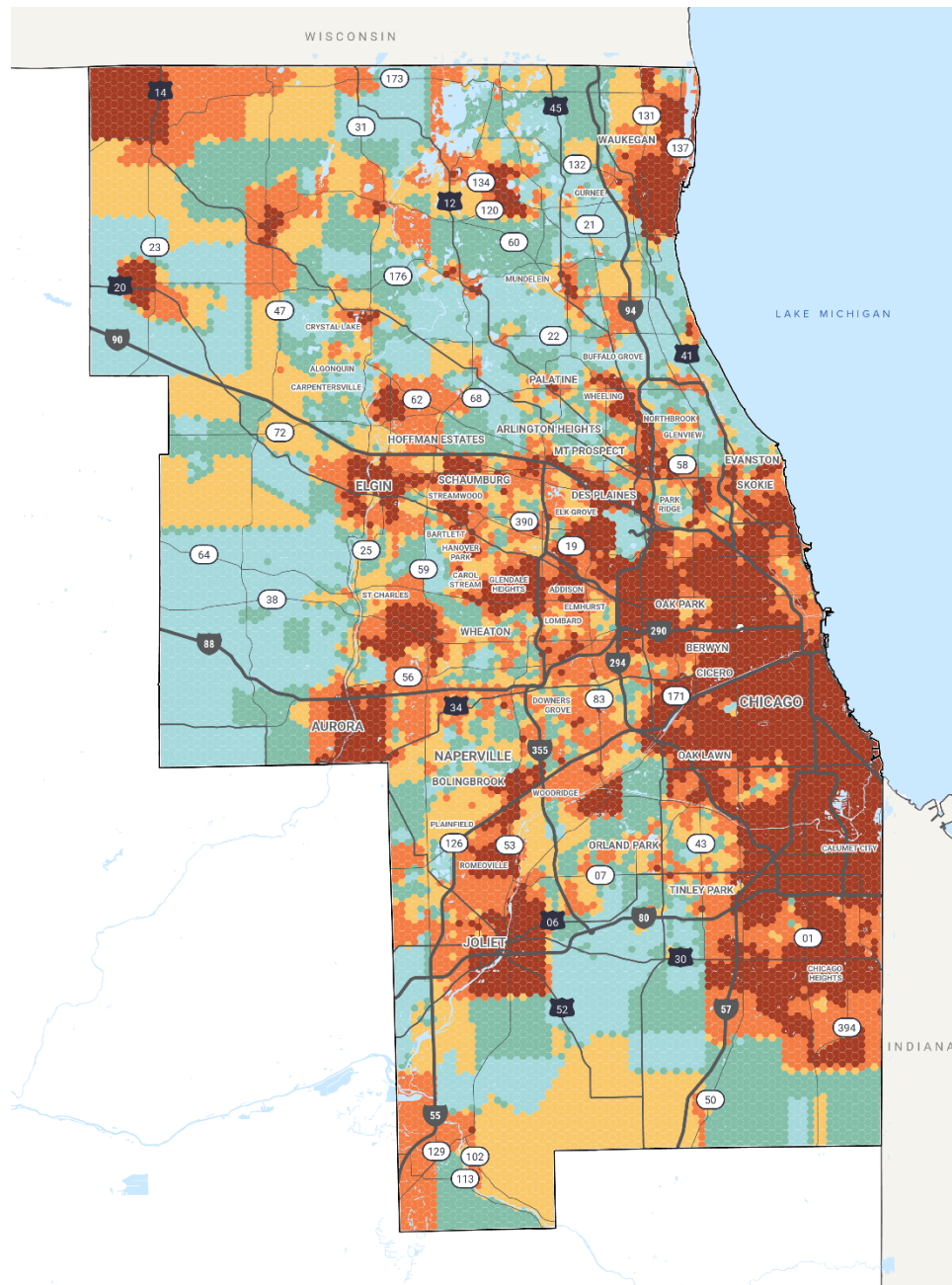


District Equity Profiles

In addition to analyzing Equity need at the state level, an analysis was completed at each IDOT district level. For the IDOT districts, equity need was determined only considering the census tracts located within each district boundaries. Each district is being compared with itself rather than the entire state to determine pockets of need with greater specificity than at the statewide scale.

Areas with the highest equity tier (top 20%) included the following:

District 1			
Chicago	Harvard	Round Lake Beach-- McHenry--Grayslake	
District 2			
Davenport	Freeport	Kewanee	Rockford
Sterling			
District 3			
DeKalb	Kankakee	Peru--LaSalle	
District 4			
Galesburg	Monmouth	Peoria	
District 5			
Bloomington--Normal	Champaign	Danville	Rantoul
District 6			
Beardstown	Jacksonville	Quincy	Springfield
District 7			
Decatur			
District 8			
Alton	Centralia	Chester	St. Louis
District 9			
Benton	Cairo	Carbondale	

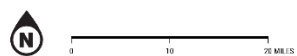


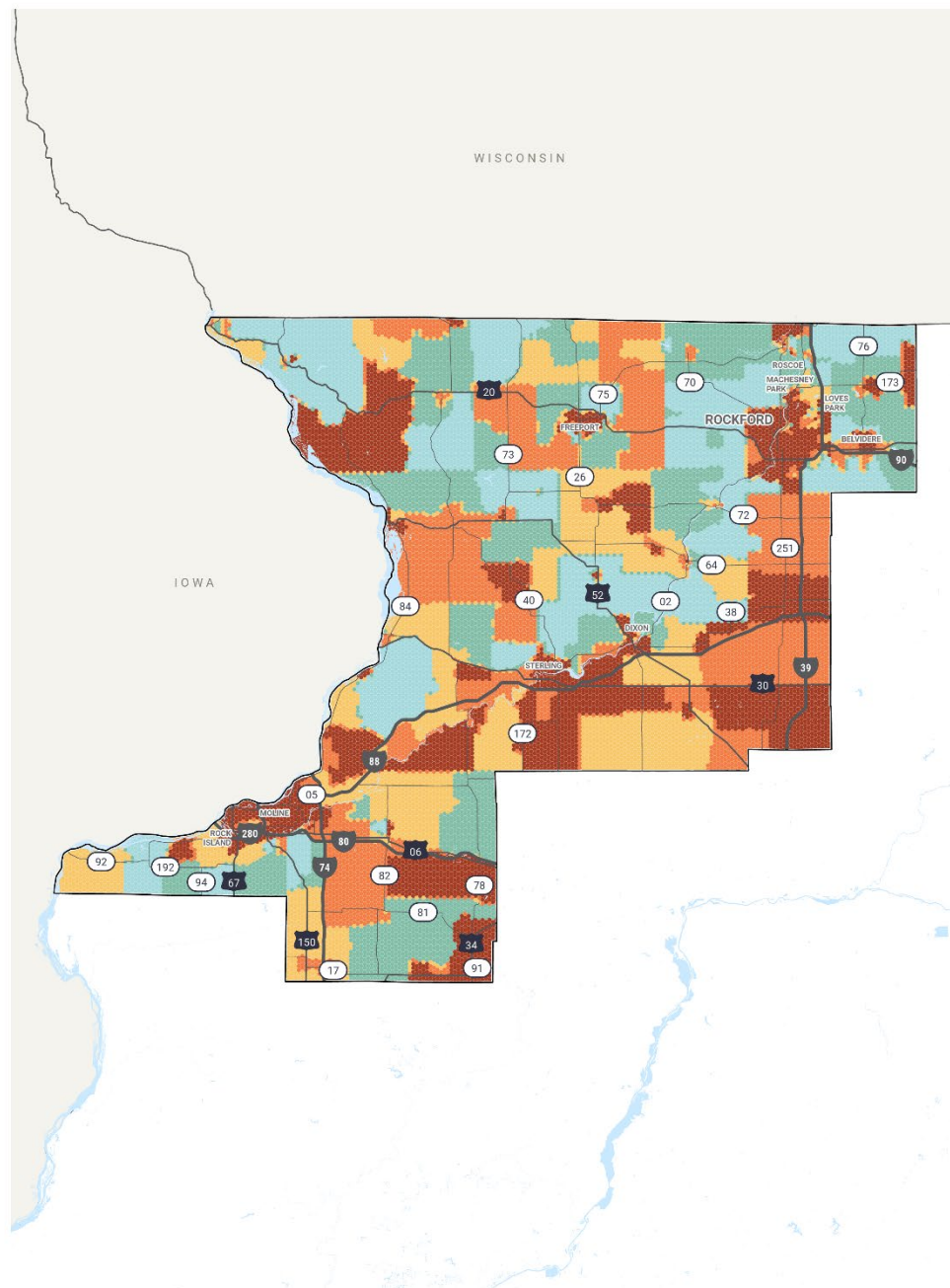
ILLINOIS DEPARTMENT OF
TRANSPORTATION
DISTRICT: 1

EQUITY ANALYSIS

Composite Equity Results

- High Equity Need
- Medium Equity Need
- Low-Medium Equity Need
- Low Equity Need



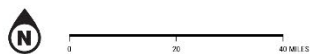


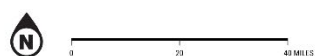
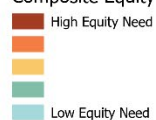
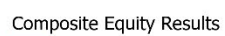
ILLINOIS DEPARTMENT OF
TRANSPORTATION
DISTRICT: 2

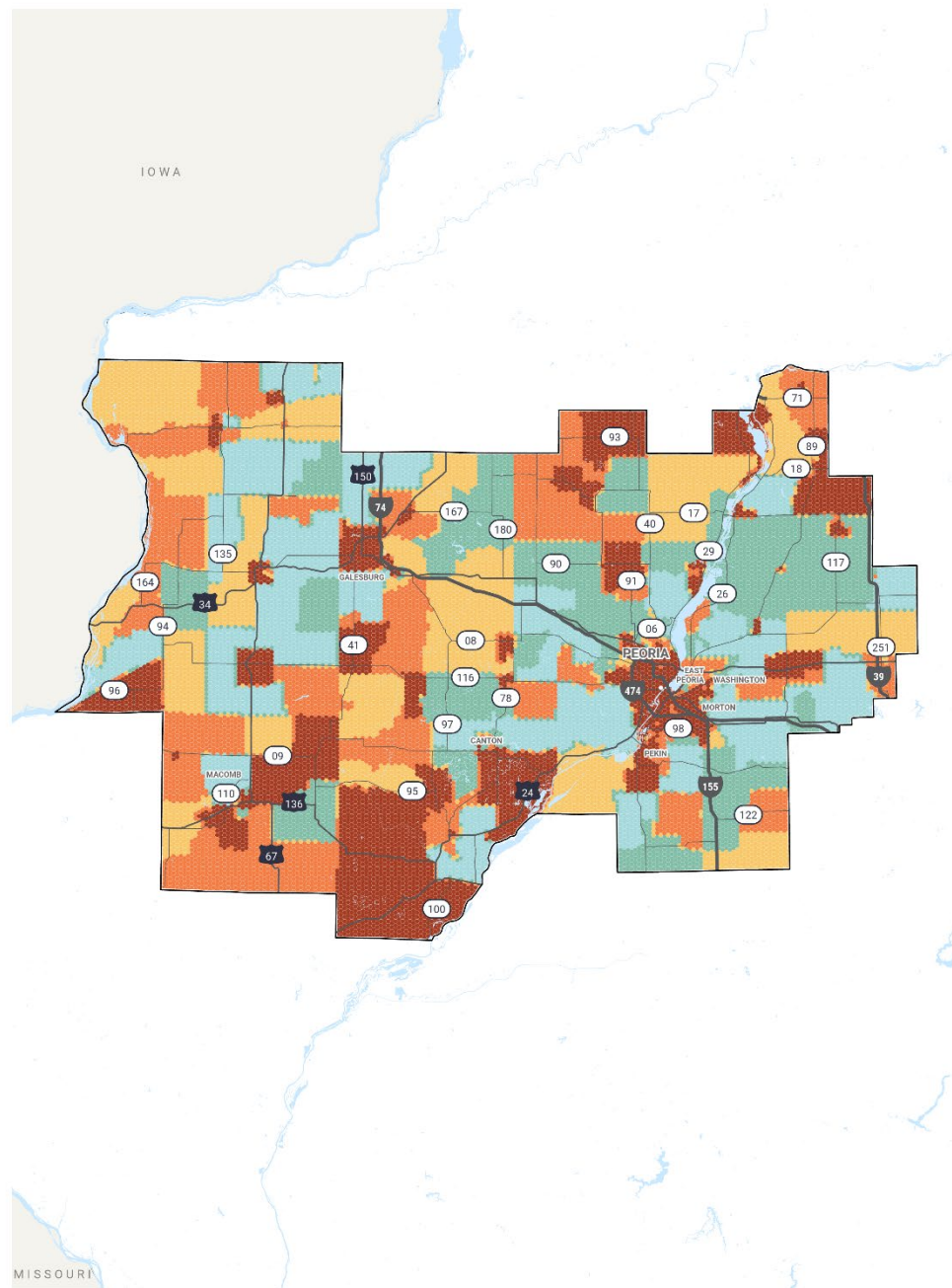
EQUITY ANALYSIS

Composite Equity Results

- High Equity Need
- Medium Equity Need
- Low Equity Need
- Very Low Equity Need





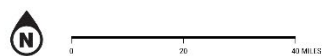


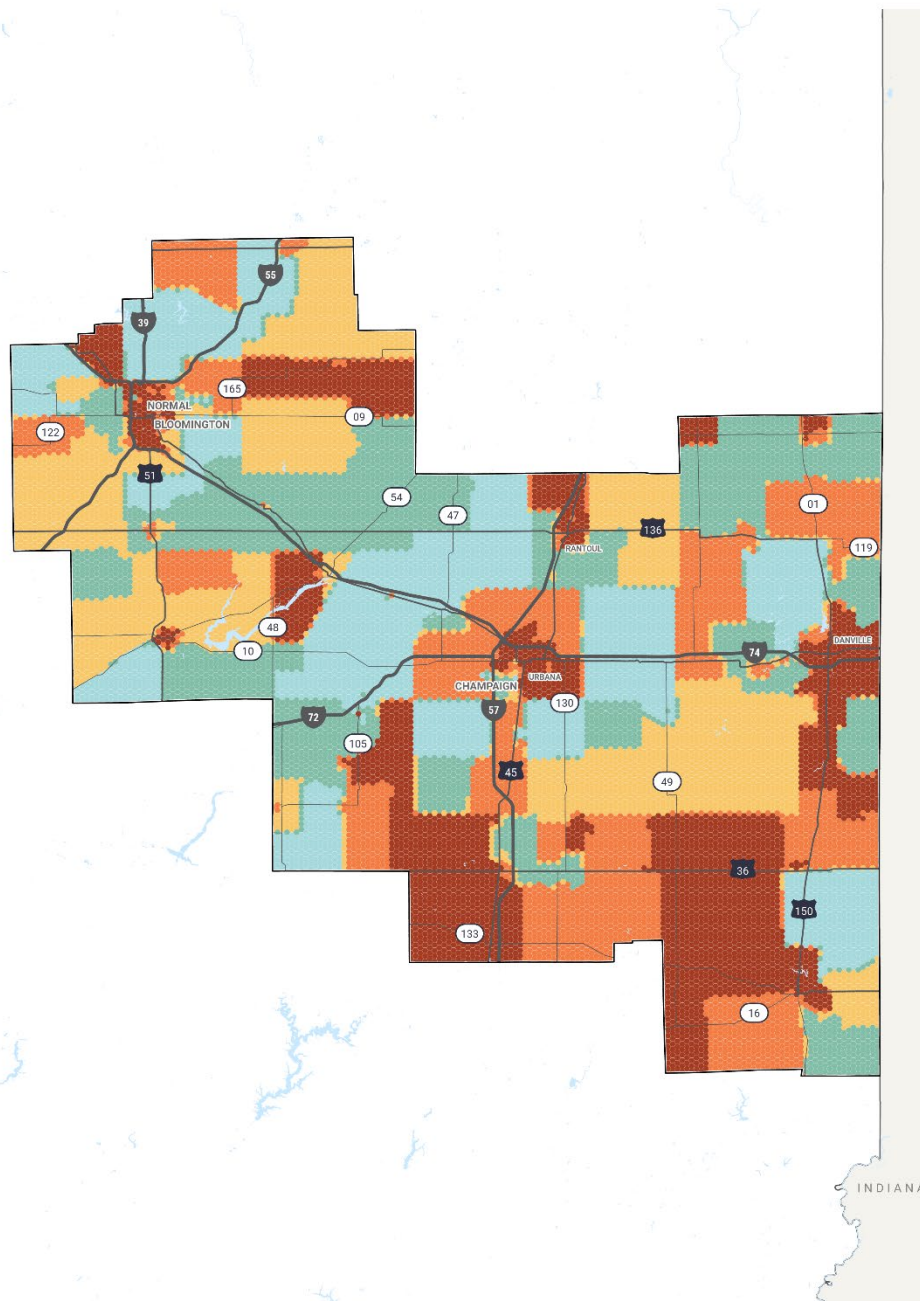
ILLINOIS DEPARTMENT OF
TRANSPORTATION
DISTRICT: 4

EQUITY ANALYSIS

Composite Equity Results

- High Equity Need
- Medium Equity Need
- Low-Medium Equity Need
- Low Equity Need





ILLINOIS DEPARTMENT OF
TRANSPORTATION
DISTRICT: 5

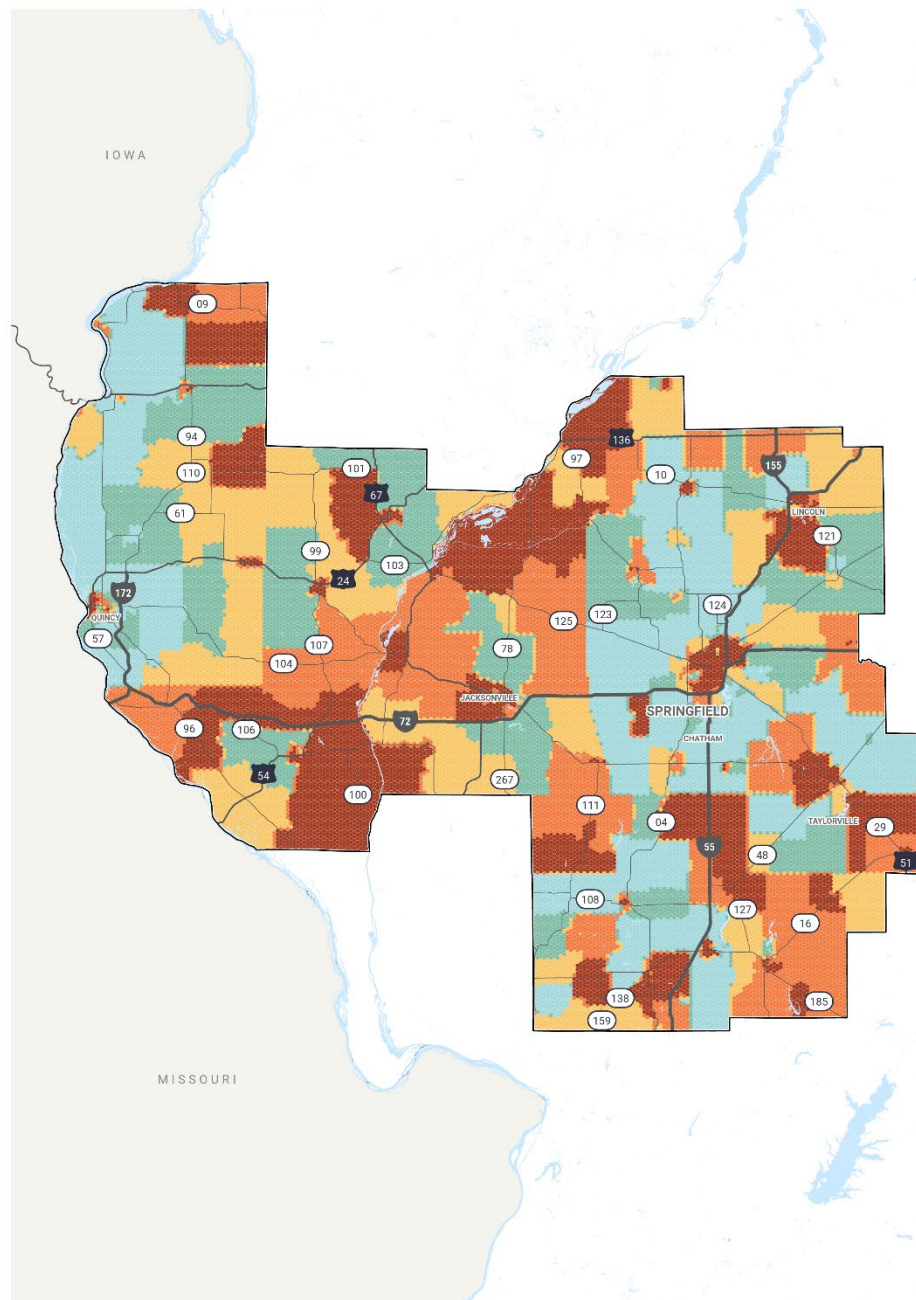
EQUITY ANALYSIS

Composite Equity Results

- High Equity Need
-
-
- Low Equity Need



0 10 20 MILES



ILLINOIS DEPARTMENT OF
TRANSPORTATION
DISTRICT: 6

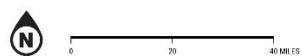
EQUITY ANALYSIS

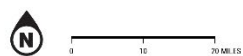
Composite Equity Results

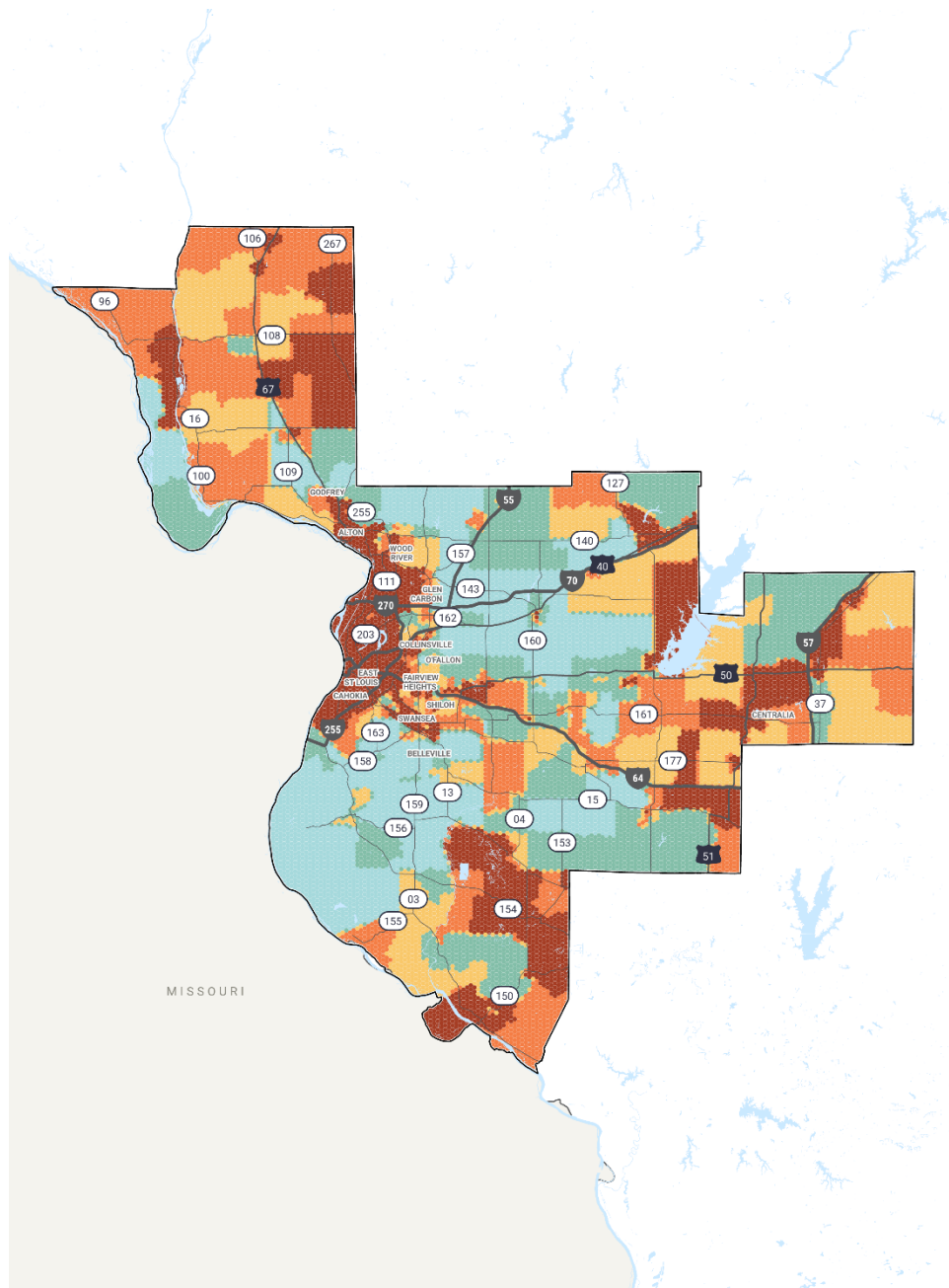
High Equity Need

Medium Equity Need

Low Equity Need







ILLINOIS DEPARTMENT OF
TRANSPORTATION
DISTRICT: 8

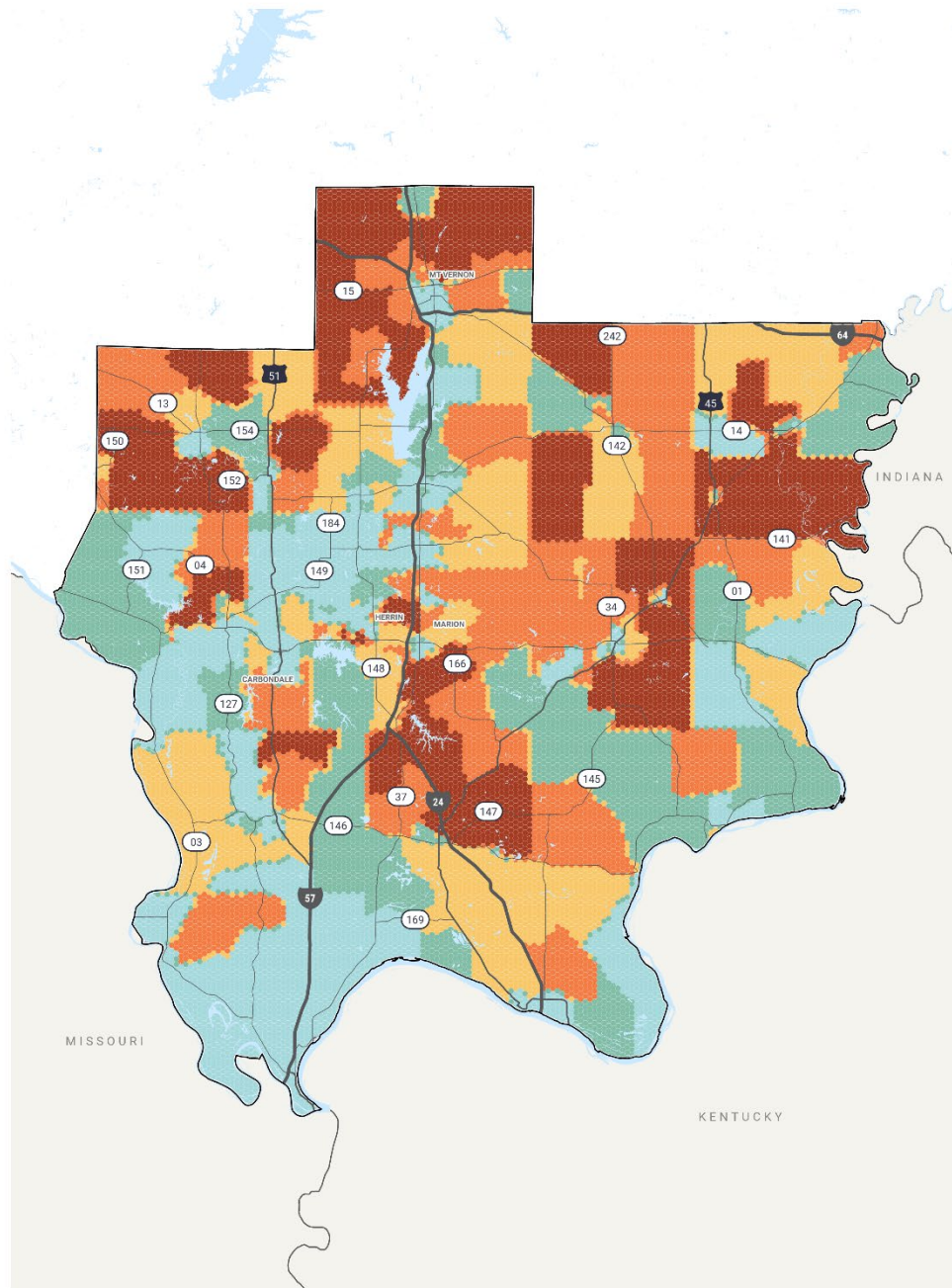
EQUITY ANALYSIS

Composite Equity Results

- High Equity Need
- Medium Equity Need
- Low-Medium Equity Need
- Low Equity Need



0 20 40 MILES



ILLINOIS DEPARTMENT OF
TRANSPORTATION
DISTRICT: 9

EQUITY ANALYSIS

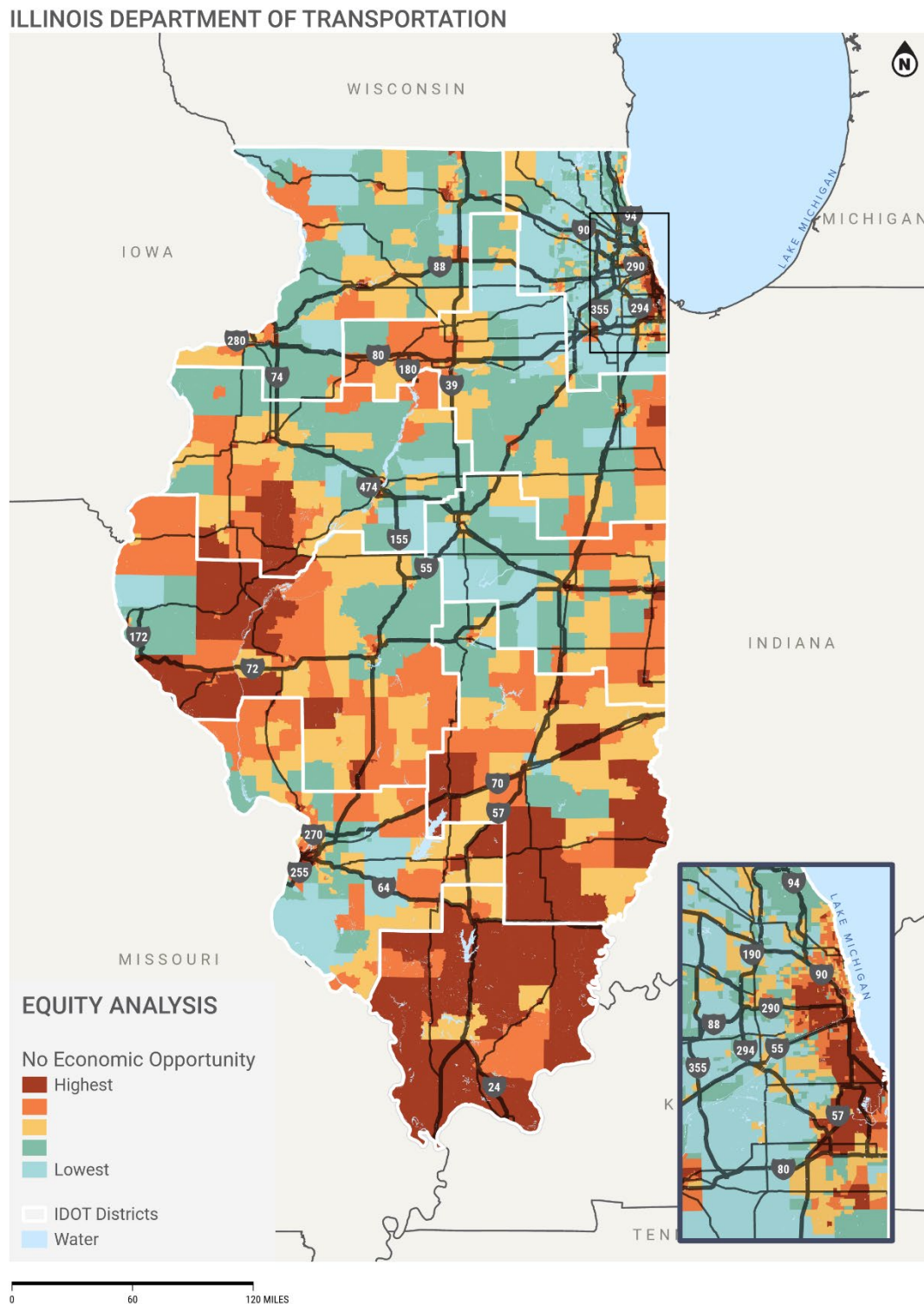
Composite Equity Results

- High Equity Need
- Medium Equity Need
- Low-Medium Equity Need
- Low Equity Need

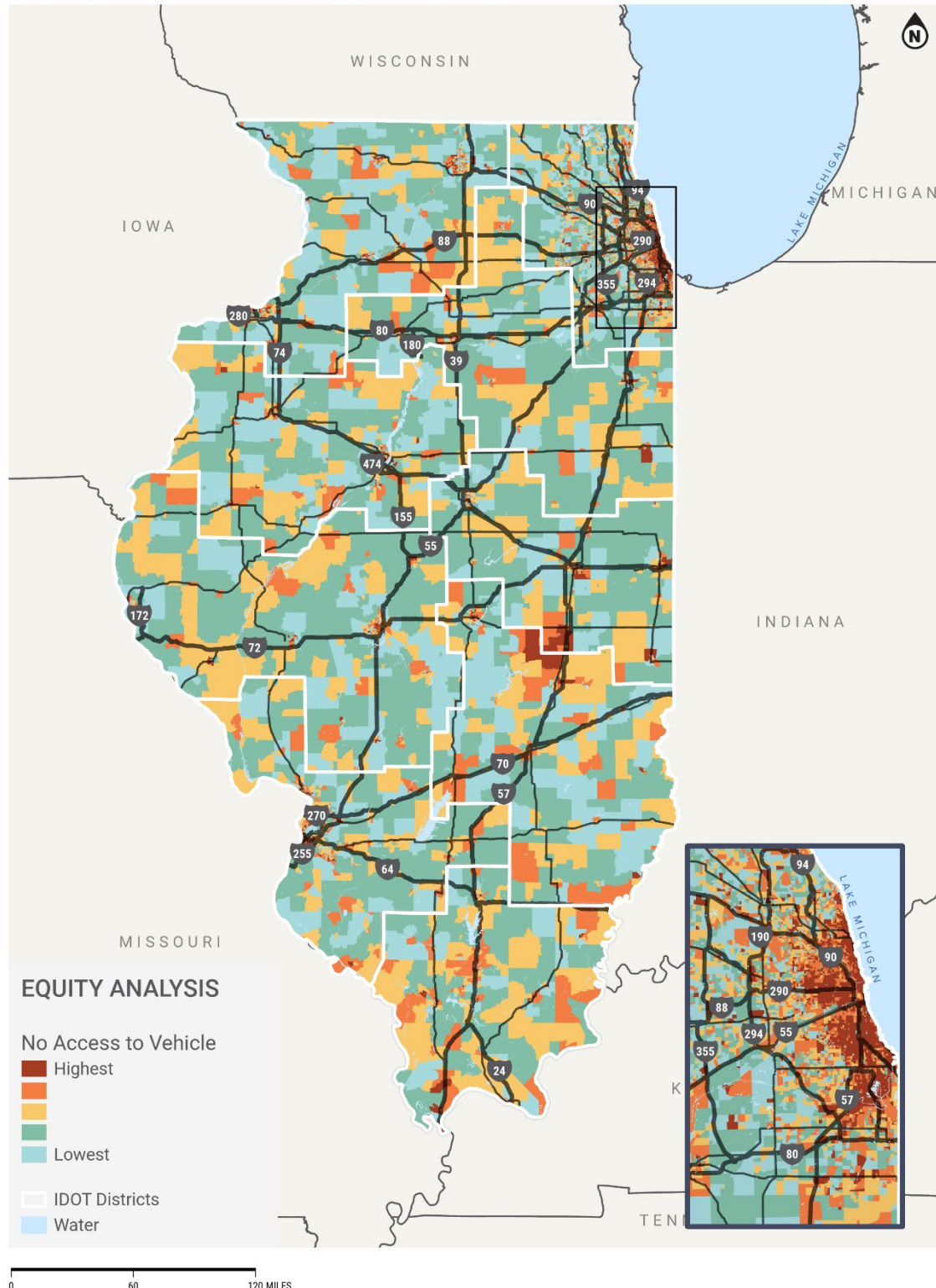


0 10 20 MILES

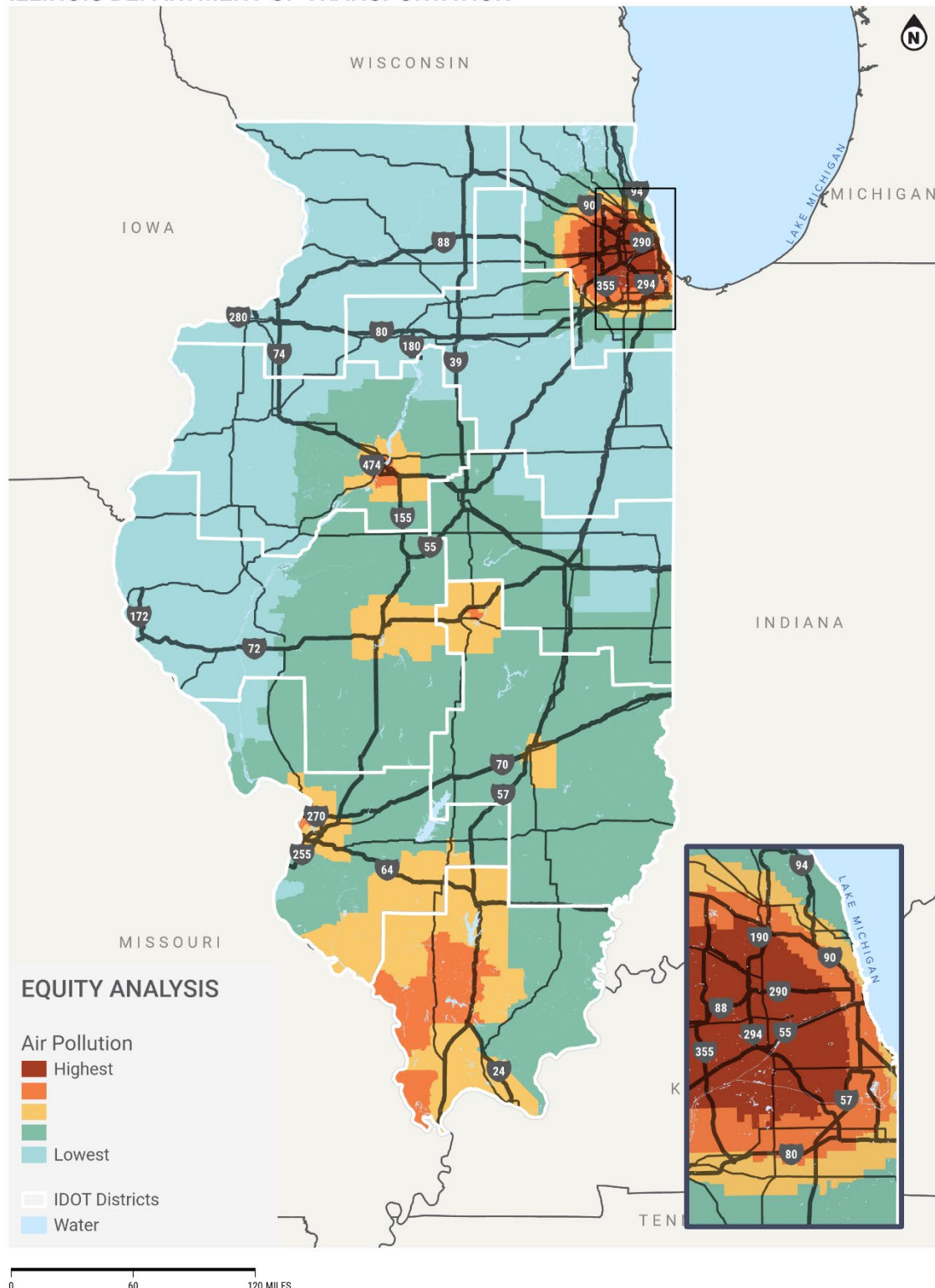
Appendix I: Indicator Maps



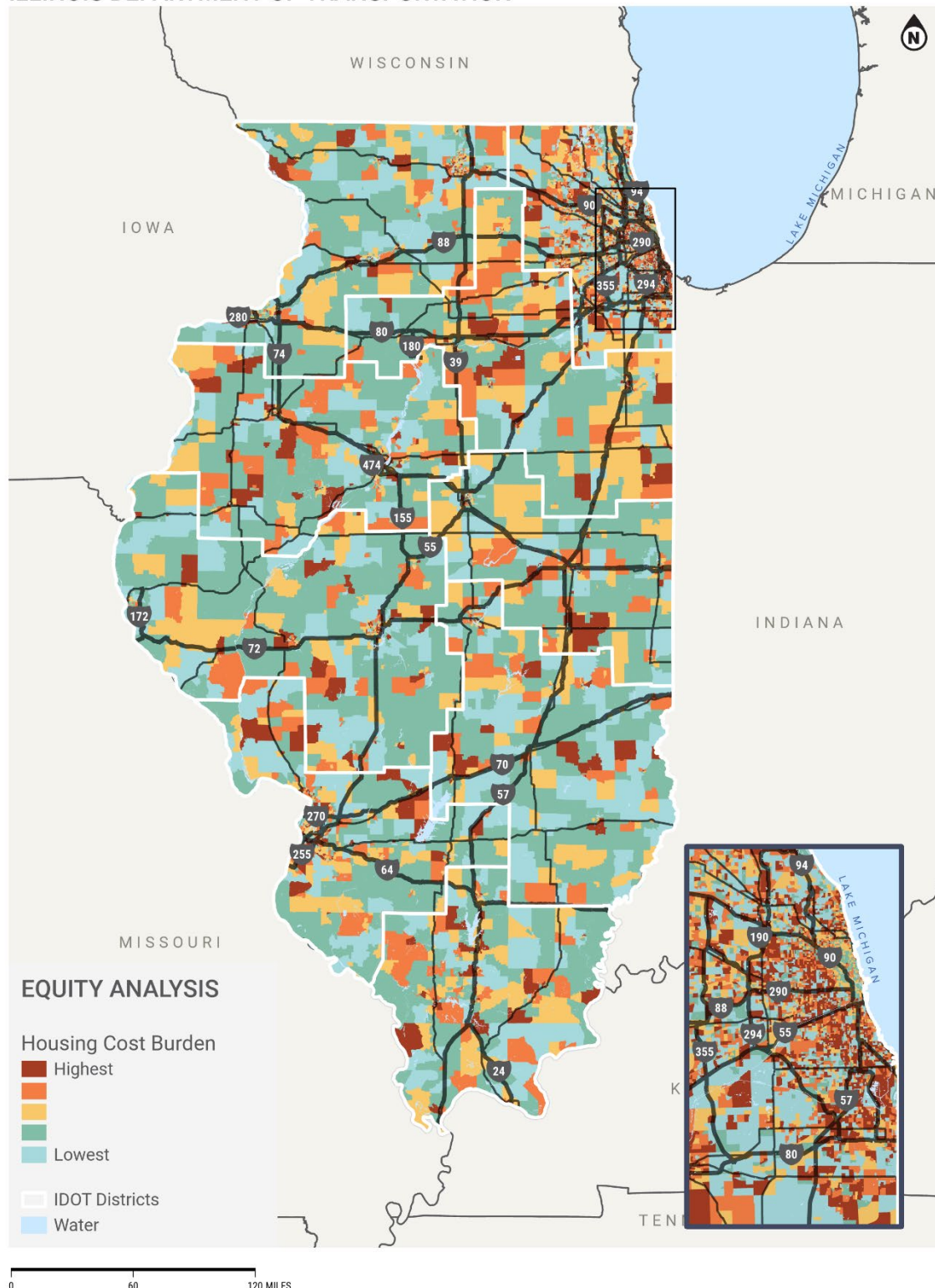
ILLINOIS DEPARTMENT OF TRANSPORTATION



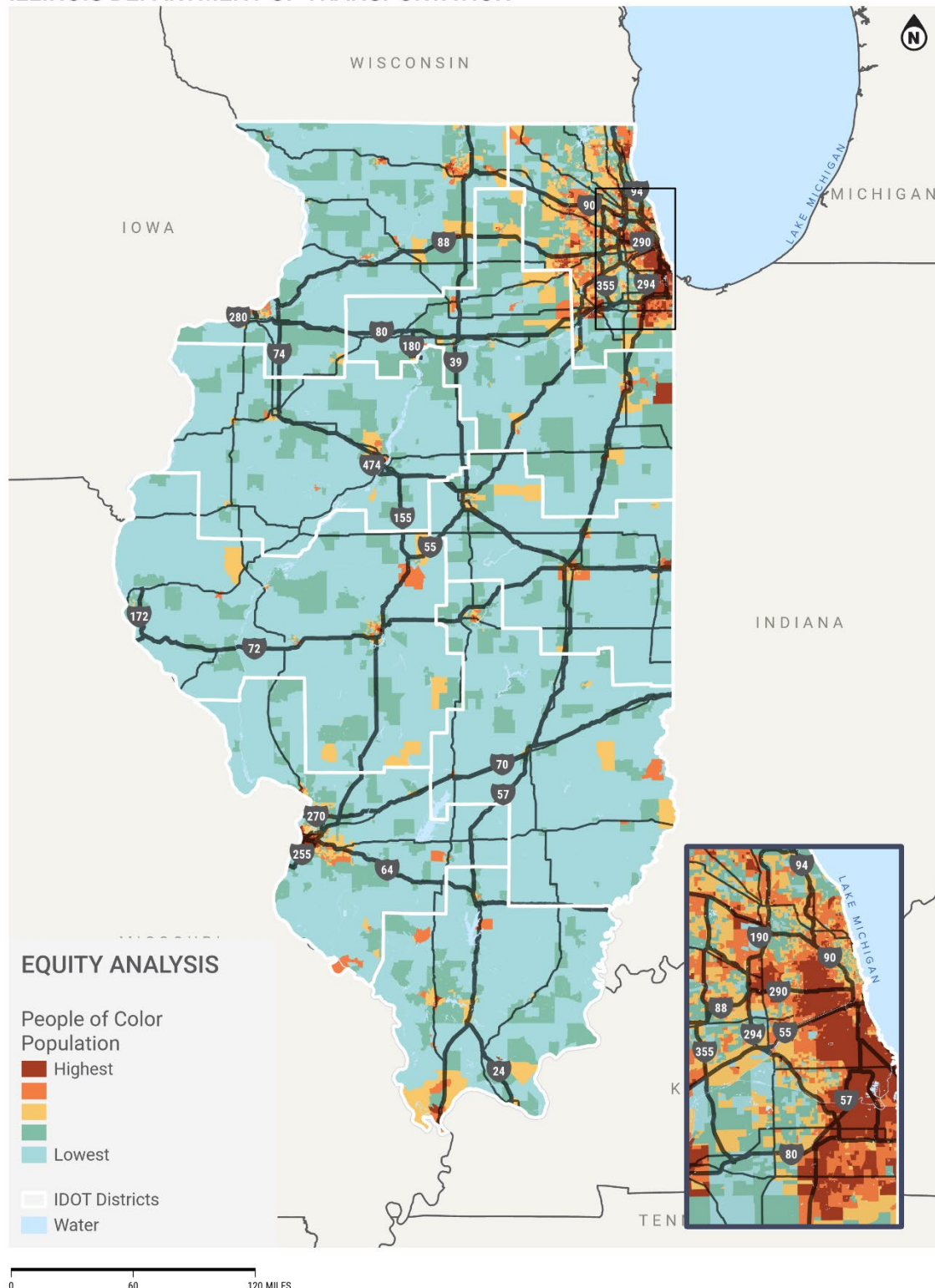
ILLINOIS DEPARTMENT OF TRANSPORTATION



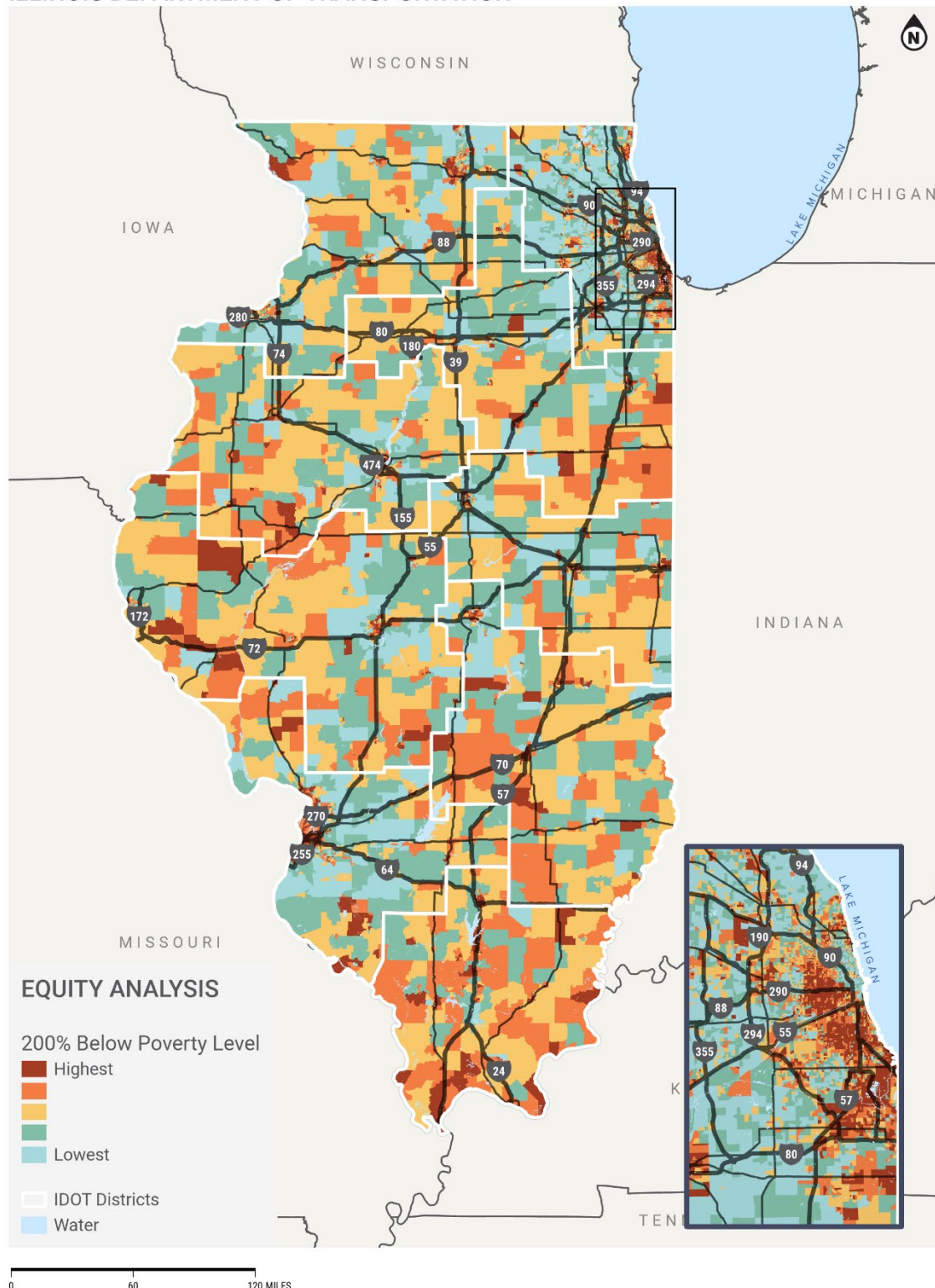
ILLINOIS DEPARTMENT OF TRANSPORTATION



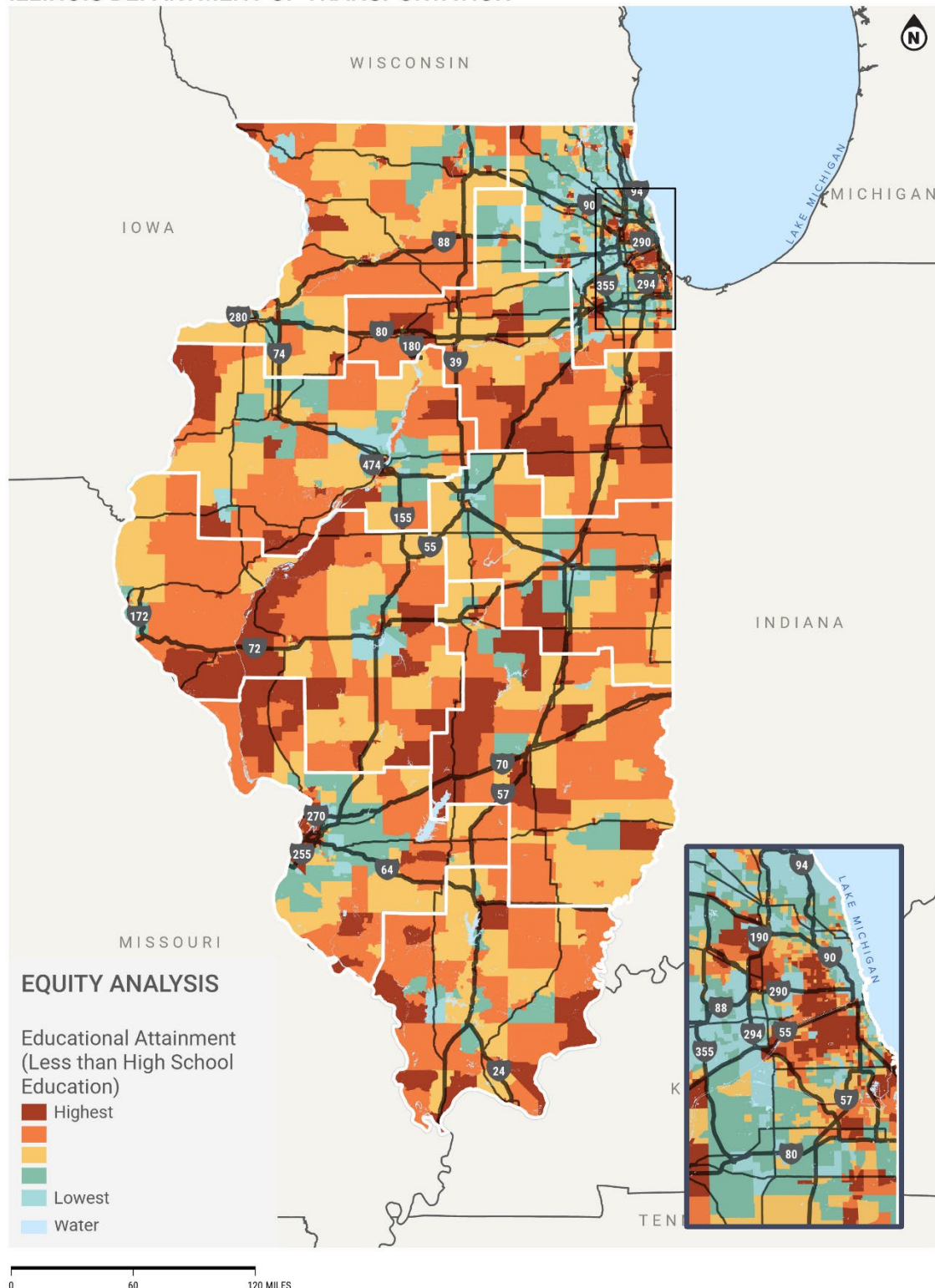
ILLINOIS DEPARTMENT OF TRANSPORTATION



ILLINOIS DEPARTMENT OF TRANSPORTATION



ILLINOIS DEPARTMENT OF TRANSPORTATION



ILLINOIS DEPARTMENT OF TRANSPORTATION

